



Photo by H. Armstrong Roberts.

THE Country GUIDE

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MARCH, 1950

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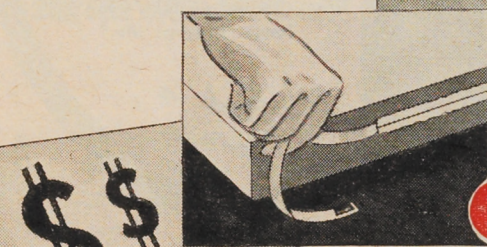
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Under The Peace Tower

ONE of the strangest developments in postwar Ottawa has been the reluctance of officials of different nationalities to go home. From what they see of Canada, and particularly of Ottawa, they like this country much better than their own. In fact, they don't like to go back to it.

Diplomats are sent here to represent their own countries. They are really glorified propagandists for their homeland. Yet they become so impressed with Canada, that instead of plugging for their own country, they throw up their jobs, they throw up their pensions, they throw up everything, and decide they'll stay here.

Of course the most spectacular of all those who sang "Don't Take Me Home" was Igor Gouzenko, cipher clerk for the Russian Embassy, whose startling revelations unloosed the now famous spy probe. But the "Canada First" crowd is recruited from a variety of countries.

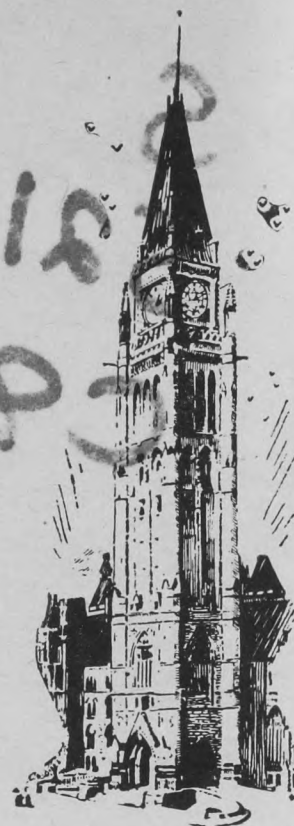
There was, of course, Frantisek Nemec, Czechoslovak minister. He called us all down to his house on the Driveway one day a couple of years ago, and said that after wrestling with his conscience for a long time, he was resigning; he was staying in Canada. Last time I saw him, a couple of days ago, he was helping his wife in her cake shop, out Bank Street, trying to look after the heavy Valentine trade. Mr. Nemec would not serve under Klement Gottwald, the Czech national leader, after the last of the moderates, the fabulous Jan Masaryk, went out of a window in Prague.

Then, at different times, Dr. Vladimir Moudry, first secretary; and Dr. Karel Bala, commercial attache, decided that anything was better than going back home. This view was also held by Dr. Josef Kotrly, consul general in Montreal. Even the military and air attache, after giving the Gottwald government a try for a while, decided he liked the free air of Canada well enough to jump his job. He was Col. Jaromir Petzold.

Earlier, of course, Rene Ristelhueber, Vichy Minister to Canada, one day decided he had had enough, and told Vichy and Petain what they could do with their job. He got permission to stay on and use the parliamentary library, and later he secured a post as a professor in St. Stanislas College in Montreal.

NOT for any political reasons, but because he found in Canada the kind of job he liked, Bernard Le Chartier, commercial counsellor for France, decided in 1949 that from then on, he'd sing O Canada instead of La Marseillaise.

There are three Polish plenipotentiaries in Canada. The worst is Jan Pawlica, consul general who never left Ottawa at all to go home. He was in Winnipeg prior to coming to the national capital; he has stayed here ever since. Arriving via Romania to replace him in 1940 was Victor Podolski, who became the first Polish minister. But Podolski married a Canadian girl, now has a Canadian family, got a job with the Canadian government, and today is a Canadian citizen.



He in turn was replaced by Wacław Babinski. He came here as minister for Poland in '45. But when he saw how things were going in Warsaw, he decided to stay here. With him stayed Adam Zurowski, and numerous others including Dr. Tadeusz Brzezinski, consul general in Montreal and Gustav Zakrowski in the Toronto vice-consulate.

BUT the big sensation came when W. A. Zbik, second secretary, jumped the fence in the spring of 1949. Turning on the Polish government that sent him here, he said in effect he would sooner be a starving dog in Canada than a well-fed cat in Poland.

Zbik's jump represented a lot of courage, because with his knowledge of English and French being what it was, it proved difficult for him to hold down a good job. He has sacrificed thousands a year to breathe the free air of Canada.

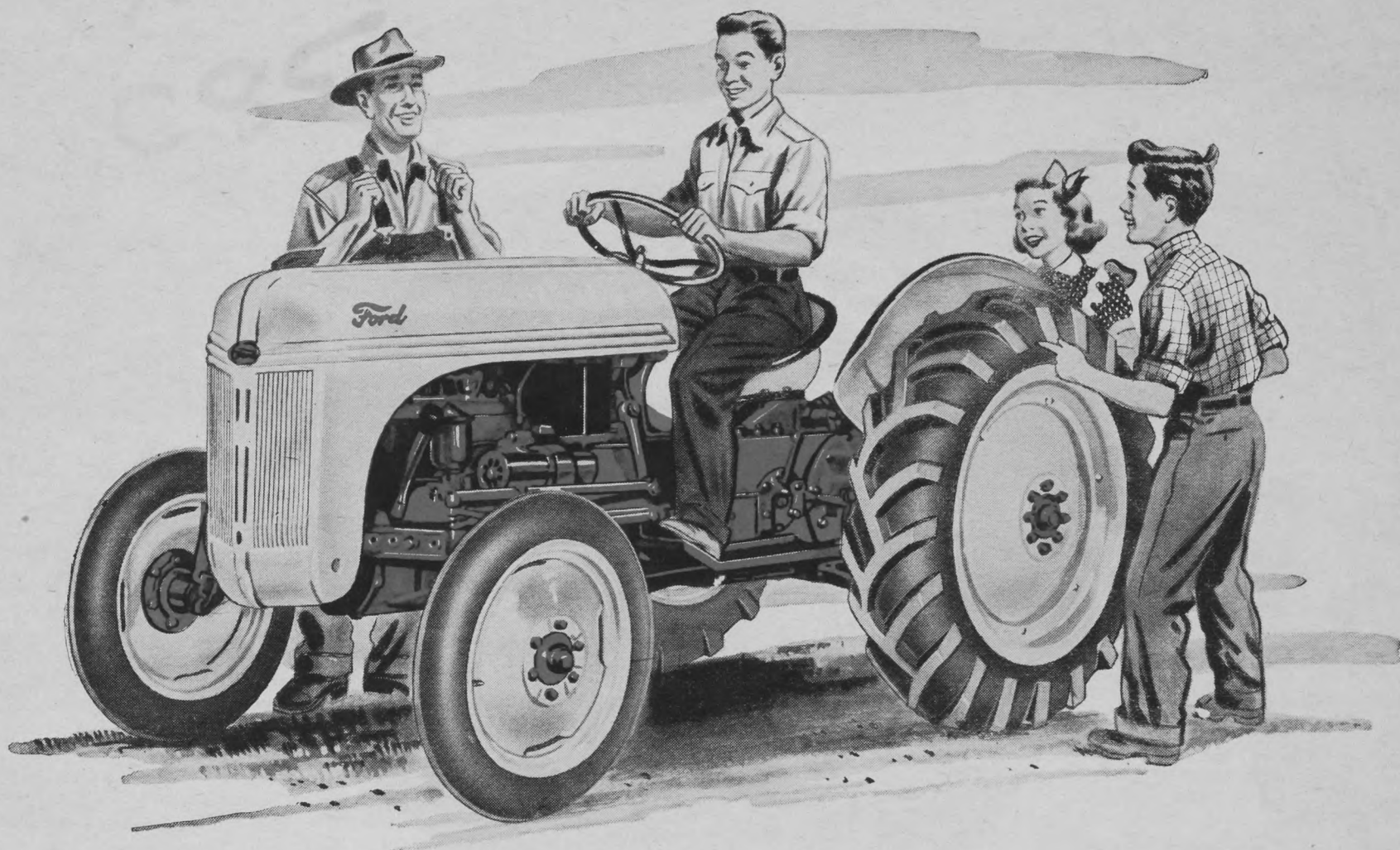
Then there is a Tito man who decided he had had enough. Franjo Starman, who helped me at the Yugoslav Legation last spring in the actual making out of my visa for Yugoslavia, left the Yugoslav Legation in early summer. He decided he would sooner take his chances in the free economy of Canada than in the glorified atmosphere of New Belgrade.

Now you might argue that nearly all of these men are Slavs, they are Iron Curtain employees, and that anything would seem better than going back to Warsaw, Prague or Belgrade. Not so.

Let us consider the case of G. G. Vincent and Peter Bennett. Both of these extremely able men came out here to "sell" Britain. As public relations experts in the United Kingdom Information office, it was their job to put the best possible foot forward for the Old Country. But whatever the blandishments of "This precious stone set in a silver sea... This England," they differed sufficiently with John of Gaunt to decide to stay here.

So after a cycle
(Turn to page 55)

First Choice of the Canadian Farmer



Ford Tractor **LEADS AGAIN**

Again the Ford Tractor has proved itself the most popular model with Canadian farmers. Last year, as in 1948, three times as many Ford 8N Model Tractors went into service as any other model. Again, more Ford Tractors were bought than all other models and makes combined in its power class. That is why you see the Ford Tractor everywhere.

There are many reasons for this popularity. The Ford Tractor is suited to practically every farm job that can be mechanized, and it works all year 'round cutting production costs on all types of farms, large and small. It is so easy to operate that anyone who can drive a car can swing in and take a hand when time counts in a big

way. It's such a pleasure to drive, and so safe to operate that brothers and even sisters vie with one another for the opportunity of driving it. And busy fathers are glad to have this help when necessary.

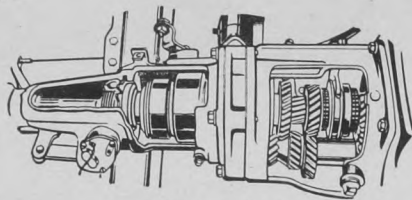
One of the reasons for this ease and safety of operation is the *built-in* hydraulic control mechanism. Matching Dearborn implements are attached by triple-quick, three-point linkage, carried on the Ford Tractor and raised and lowered by the Hydraulic Touch Control lever. Draft and depth control are automatic through the hydraulic mechanism. All this means smoother, faster, cheaper and safer operations. That's Ford Farming. It's no wonder the whole family likes the Ford Tractor!

Tractor and Implement Division • Ford Motor Company of Canada, Limited



Ford Farming
LESS WORK... MORE INCOME



**EXTRA SAVING**

New "Touch-O-Matic" Overdrive (optional at extra cost) gives easier, more restful driving on the open road. Saves gasoline, reduces engine wear.

**EXTRA COMFORT**

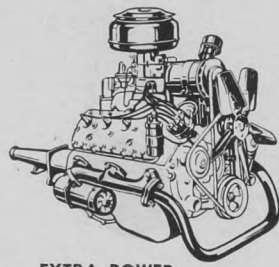
Cradled between front and rear wheels on Meteor's balanced springing, you just float along. New zig-zag springing and foam rubber seats for added driver comfort.

**EXTRA CONVENIENCE**

New push-button door handles and rotary latches assure easy door opening and positive closing. And you can't lock yourself out.

**EXTRA EFFICIENT AIR CIRCULATION**

Meteor's built-in ventilation system assures an abundance of fresh air in summer. With the "Magic Air" Heater it gives complete winter comfort too with efficient defrosting.

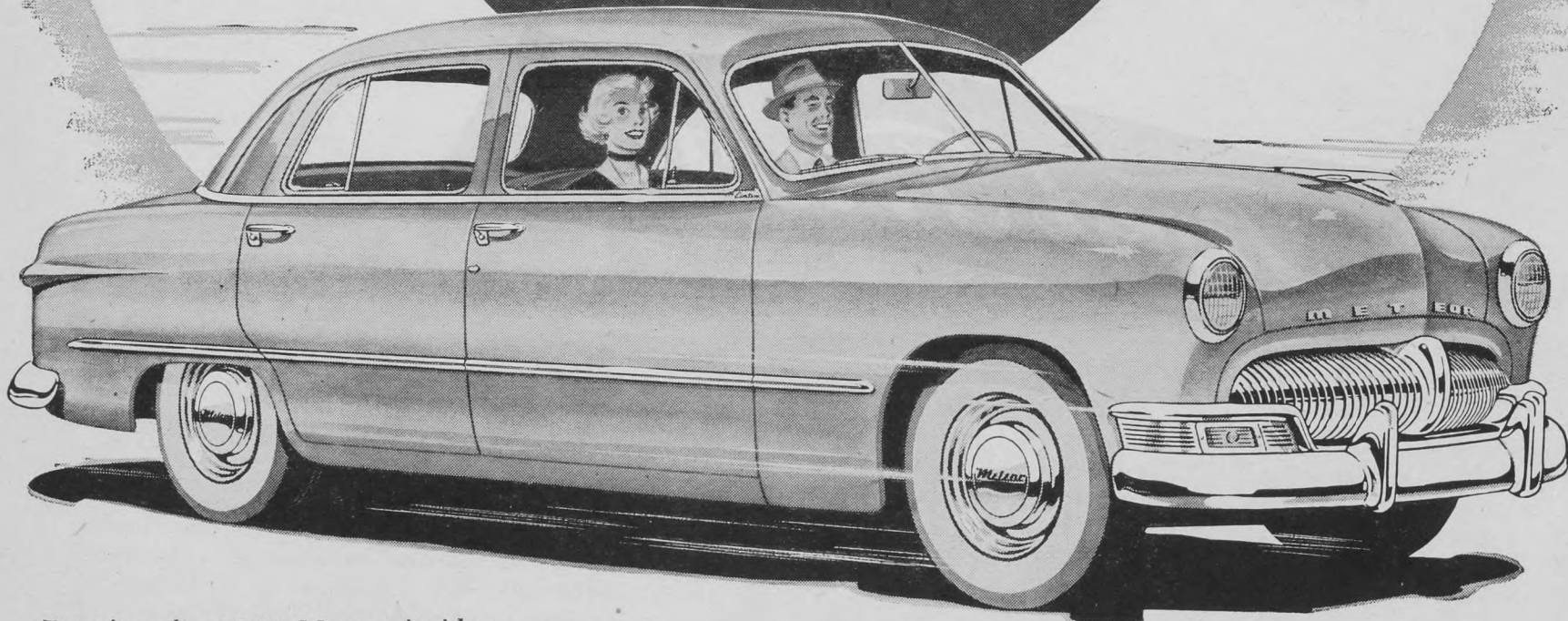
**EXTRA POWER**

Meteor 100 Hp., V-type, 8-cylinder engine with "Equa-Flo" cooling is smooth, powerful, economical.

See all the
extra features in

Meteor.

STAR PERFORMER IN THE LOW-PRICE FIELD



Examine the 1950 Meteor inside and out. See the extra value everywhere, the rich quality of its broadcloth or mohair upholstery, the smartness of its instrument panel and interior trim. Take the wheel and drive it! Then you'll realize how much extra value the Meteor has to offer you.

Chrome wheel trim rings and white sidewall tires optional at extra cost.

BE MILES AHEAD WITH



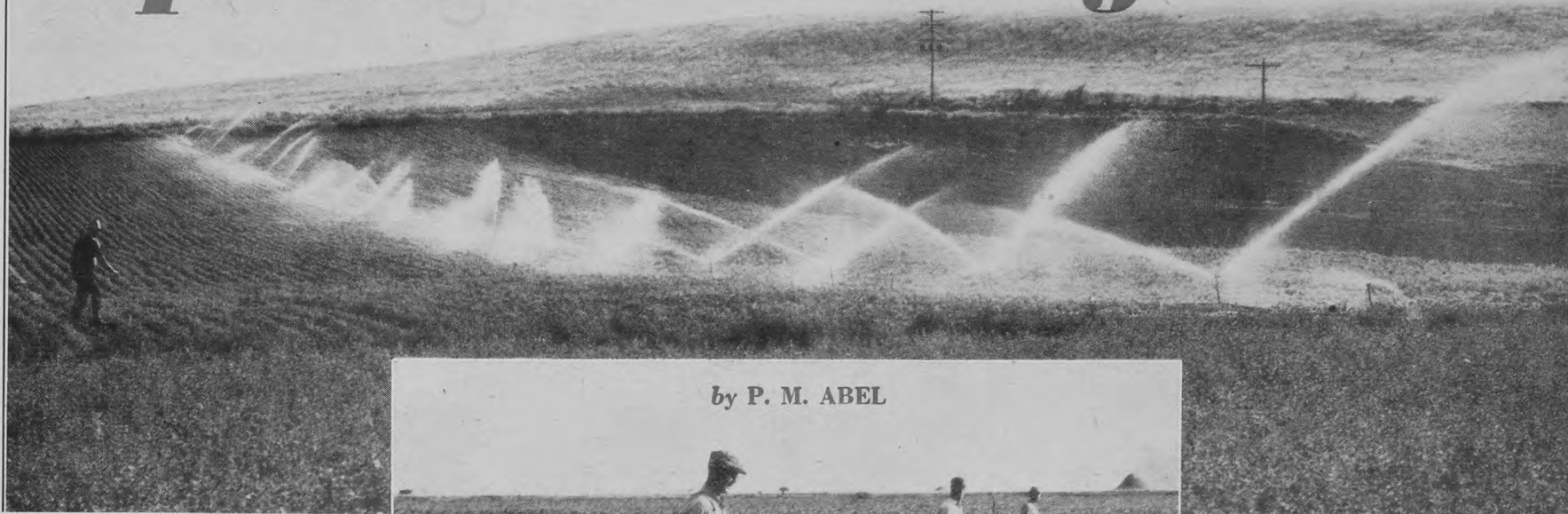
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A PRODUCT OF FORD OF CANADA

For Your Demonstration Drive... **SEE YOUR MERCURY-LINCOLN-METEOR DEALER**

Sprinkler Irrigation



Courtesy U.S. Bureau of Reclamation

Above: No lawn hose this: irrigation water being applied at the rate of 140 gallons per minute on the Doc Kite Farm, Sunnyside, Wash.

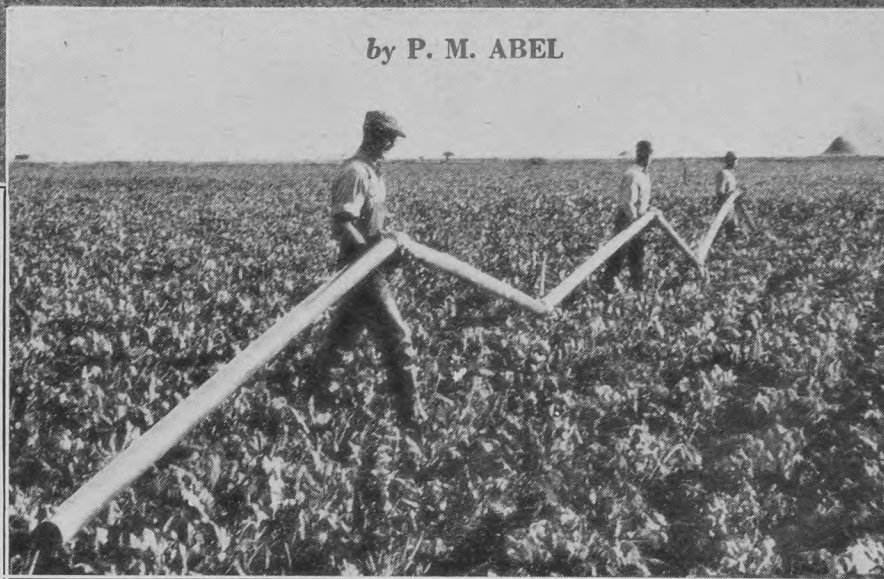
READERS of eastern newspapers prior to the last federal election campaign were informed that Canada's agricultural policy over these last few years has been all wrong. Whereas governments of the past have spent millions on experimental farms, the P.F.R.A., and such like, Toronto scribes declared that emphasis should be put where it properly belonged, on the development of irrigation. The newsmen went on to infer that if the right party was placed in power, instead of the half million acres now under the ditch, a start would be made to ensure an adequate water supply for the forty million acres now growing small grains. Drought on the western prairies would be a thing of the past.

The western papers did not tell the same story for the simple reason that they would have been laughed out of court. The western farmer knows that probably at the most not more than two million acres can ever be watered. The white collar irrigationists of King Street do not seem to be aware that an overwhelming proportion of prairie farm land is a glacial drift, unsuitable for gravity irrigation, and they certainly have not stopped to equate stream flow of western rivers against acreage. Most of the land which can be flooded is in a few relatively small blocks. A very large majority of prairie farmers will never own a long-handled shovel.

However, a new development is under way that forces an observer to make an important exception. Sprinkler irrigation has arrived in western Canada. Thousands of farmers whose location denies them the hope of ever becoming proper irrigation farmers will, in the course of a few years, discover that they can have a few irrigated acres, enough to ensure a garden, perhaps to ensure feed for their livestock, and perhaps even enough for a small field of registered seed.

IT began with Leslie Gray, superintendent of small irrigation projects for P.F.R.A. Scouting around in the United States, Gray discovered that the Americans had got beyond the stage of sprinklers for lawn use back in depression days. All over the country sprinkler irrigation has been applied to small areas growing specialty crops. Lands unsuitable for surface irrigation, either because of topography that made levelling out of the question, or because they were too light and porous, have been equipped with pumping outfits, pipelines and sprinklers and planted to high grade cash crops. In the Pacific Northwest it is orchards; in California it is truck crops; in the arid south-

by P. M. ABEL



Courtesy of Major Aluminum Products

Left: Three men carry six 20-foot lengths of light aluminum pipe, showing flexibility of couplings. Anderson Farm, Barnwell, Alta.

An American innovation for irrigating land not suitable for the conventional method of applying water by gravity promises to become popular here

west, where crops get up to twenty light sprinklings a year, it is alfalfa. In fact almost every crop except rice is now sprinkler irrigated somewhere in the United States. Of course there have been a few failures because sprinkler irrigation requires know-how, no less than surface irrigation, but on the whole the results are impressive. The Bureau of Reclamation at Washington declares that once sprinklers are put in they rarely come out.

Turning on the valve where a lateral branches from the six-inch main on the Anderson Farm.



THE Americans kept adding cautiously to their sprinkled acreage during the '30's and the war years. And then something happened to give it a great boost. While the war was on the Allied air fleets were hungry for aluminum and the price was high. When the airplane contracts were whittled down, a market had to be found for a rapidly piling surplus. It went into almost every conceivable product. The big companies which had sewn world production of that metal up in a tight cartel, were mighty glad to have an outlet like irrigation piping for it could take a big tonnage of the stuff. It was an ideal metal for the purpose. Because of its light weight a man can lift two 20-foot lengths of five-inch pipe with ease. The invention of a simple, quick and sure-fire coupling made it possible for a farmer to uncouple, move and re-assemble a complete layout in fast time.

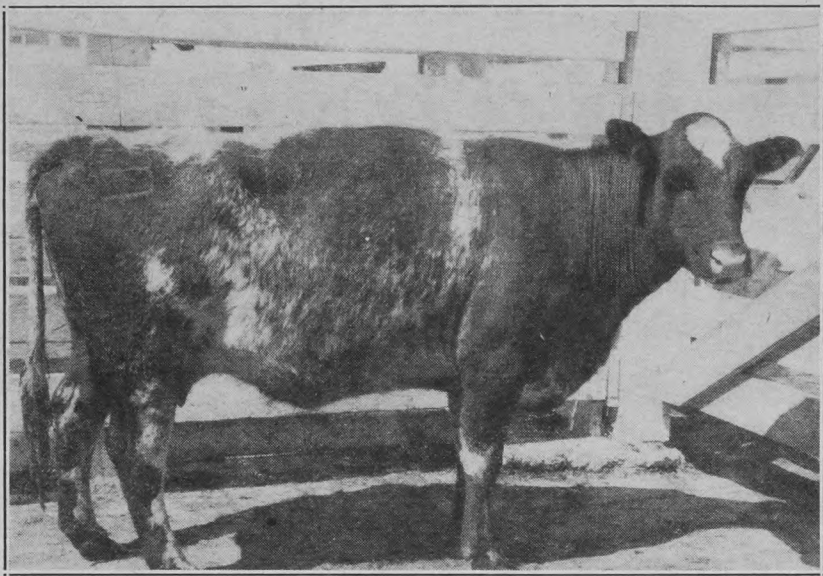
ONE look at the rate of expansion going on in the United States convinced Gray, formerly manager of the big Eastern Irrigation District at Brooks, that sprinkler irrigation had a definite place on the Canadian prairies. Irrigation as he knew it in Alberta was a hopeless dream for 95 per cent of prairie farmers. But most of them have, or can have a dugout. Many of their farms have water courses, or draws which can catch a sizable spring runoff if properly dammed. A few have large sloughs. Some are lucky enough to live alongside running water.

Even a dugout will hold enough water to cover an acre of land one foot deep. Few kitchen gardens are over an acre in extent. A foot of water will guarantee a crop of vegetables in the driest of years. The bigger sources of water will guarantee feed for a small herd.

Half the money spent on farm relief in the disastrous '30's was spent on feed. Guarantee a man a few haystacks, plus a cellar full of vegetables and you have armed him against the worst disaster. Multiply that by a few thousand farms in the dry belt and you have mightily improved the strength of a province to come through bad crop years.

The reasoning was so compelling that P.F.R.A. and Saskatchewan Government departments worked hand in hand to popularize sprinkler irrigation wherever, in their judgment, it would work. The provincial government controls water rights. If a farmer wants to tap a running stream or impound water from a drainage basin not entirely on his own land he is encouraged to talk it over with the local agree. If the project looks feasible to him,

(Turn to page 52)



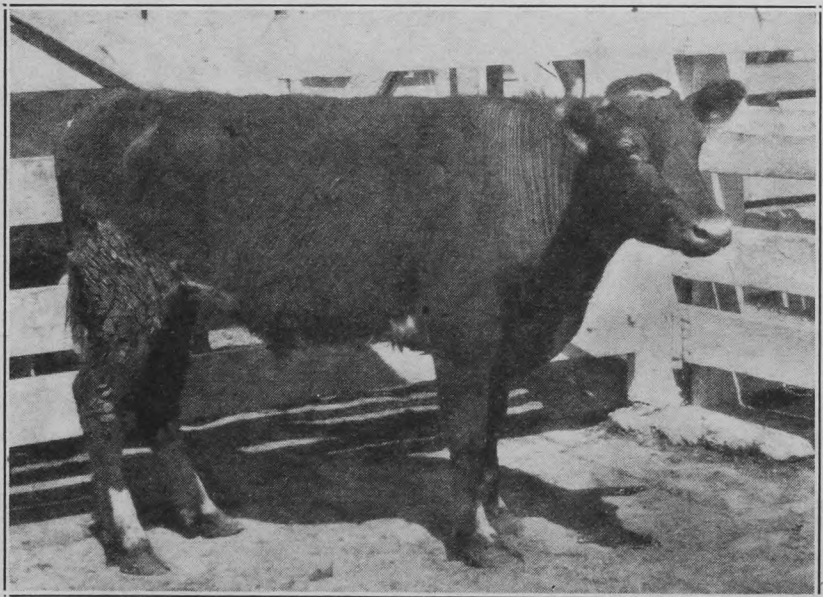
A plain cow.

THE marketing of wheat from the farms of western Canada is an epic story. Almost from the time that wheat began to grow on these plains, producers have concerned themselves with the grading and marketing of their product. In large measure producers felt that they had to keep a close watch on weighing, grading and final sale. As a result of the work that has been done on grading, No. 1 Northern is a measure of high quality wheat the world over.

The grading of cattle and cattle products has not attracted the attention and the agitation that has attended the growth of wheat grading. Either producers have felt that all was well in the industry or they have not considered it was important enough to warrant their attention. In view of the number of cattle marketed in the western provinces in 1949 and the amount of money put into the pockets of western farmers the latter can hardly be the reason. Whatever the cause, most farmers can tell you why their wheat did not make No. 1, but they are not quite so sure why a particular steer failed to top the market.

If you glance at any market report you will see livestock listed choice, good, medium and common. Most of us are familiar with the terms "red brand beef" and "blue brand beef." Where do these grades come from, who does the grading, and what is their significance to the producer? What is the demand for these different qualities of animals and grades of meat? How does the packer decide each day what he can afford to pay for a particular load of animals?

The grading of live cattle is virtually grading by the trade. There is no government grading of cattle on the hoof. Buyers for the packers meet producers or commission agents at the packing plants or in the stockyards and after some dickering arrange a price of so many cents per pound. Similar prices are probably paid for the same sex and similar quality throughout the trade on the same market on the same day. After the sale is completed the



Putting a Price

cattle are taken to the scales and a scale ticket issued which indicates buyer and seller, as well as the weight, price, sex and other details of the animal sold.

A copy of all scale tickets then goes to a Federal government office in the yards which is maintained under the authority of the

The machinery of the market place translates consumer demand into market prices, grades the animals and determines price spreads

mon. Heifers and fed calves are divided into the same four grades. Cows are listed as good, medium, common, and canners and cutters. Bulls, stocker and feeder steers and stocker and feeder heifers are classified good and common. Milkers and springers are not further divided.

Animals are fitted into these groupings according to the information on the scale ticket, and are fitted into the choice, good, medium or common grades, according to the price that they brought when sold.

For example, at the time of writing steers over 1,000 pounds selling at \$21.50 to \$22.50 per hundred-

weight are "choice." Steers selling for \$19.50 to \$21 are listed as "good;" steers from \$18 to \$19 are "medium;" and those from

\$13 to \$16 are "common." In other words, for a producer to have the idea that his steers come into the

yard, that someone—presumably a government agent—says that it is a choice steer and so the price for choice animals on the market will be determined by what it sells for, is quite erroneous. Actually the animal is choice or good, according to the price for which it sells. The proportion of choice and good, for example, will be determined to a large extent by the relative supply and demand of these particular classes on the day's market. If there is a strong demand for very good cuts, the cattle buyers will bid briskly for better quality animals and animals that might well sell in the "good" range will be bid up into the "choice" price range. The number of choice animals on the market will be determined in part by the quality of the animals coming in and in part by the demand for that quality of animal.

The strength of these relative demands for the different qualities of meat serves to determine the spread between all the different grades on the market. In recent months there has been a significant demand for meats for processing. This has meant, in the first place, that the spread between the price for bulls and other low quality animals and the price for better quality groupings has narrowed. The spread between bulls or canner and cutter cows and, for example, good steers, has not been as great as is typically the case. This extra demand has been related in part to the bidding

of American buyers for poorer animals on the market. At the same time the spread between common and good cows has narrowed. As demand shifts away from these lower quality beasts the price spread will widen.

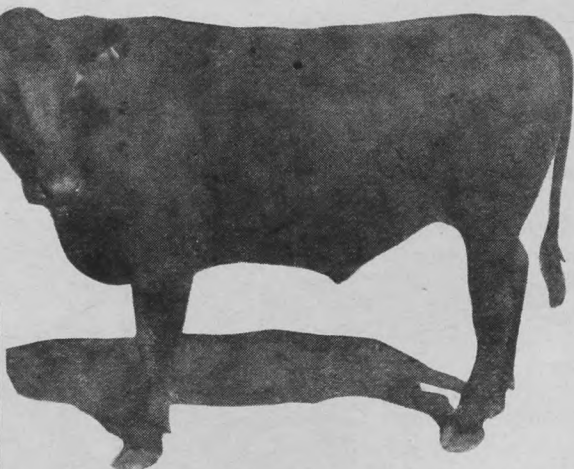
There also has been an interesting development in top grade animals in Canada over the last year or two. There has been some consumer resistance to the relatively high priced, top quality graded and branded beef. Difficulty in selling this quality of meat could be expected to narrow the spread



A good cow.

Livestock and Livestock Products Act. These tickets belong to the Public Markets Company and are returned to it. Government officials note the highest price paid as indicated on the tickets, sort according to prices paid on the yard and establish the price range for each grade. They also go through the yard pens in order to get some idea of the quality of the animals being sold at the prices they note on the scale tickets.

THE information on the scale ticket is first used to divide the animals in terms of sex and age. They are divided into general groupings—steers, heifers, fed calves, cows, bulls, stocker and feeder steers, stocker and feeder heifers, and milkers and



A plain steer (left) and a good steer (above). With extra feeding these animals might have gone up a grade.

springers. The steers are then divided into two groups by weight—up to 1,000 pounds and over 1,000 pounds. These two groups are then divided into four different grades according to the price at which the animals sold. These grades are choice, good, medium and com-

on Market Cattle

The pictures on these pages give some idea of the wide range of qualities that come to market

by RALPH HEDLIN

between it and commercial beef. This likely would have been the case but for the fact that there has been a strong demand for this quality of animal for shipment to the American market. There have been these two opposing pressures on the price for top quality animals. The net result has been that prices in this end of the market have held up very well.

ANIMAL weights also serve to determine the relative prices. The trend toward smaller families on this continent has led to a decrease in the demand for large cuts. This in turn means that cuts from smaller carcasses are relatively easier to sell. The biggest demand appears to be for cattle carcasses from 375 to 425 pounds. Winnipeg is a market that demands small cuts. In Quebec, on the other hand, the trend toward smaller cuts is not yet so pronounced, doubtless due to the fact that families are typically larger. Restaurants and cafes continue to buy large cuts and so are in the market for heavier carcasses.

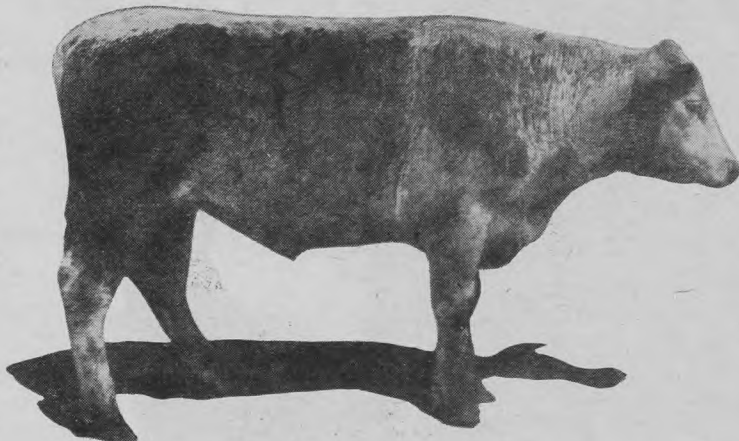
Other factors help to determine relative prices and price spreads. A good steer typically has a higher dressing percentage than a common. More meat from a good animal makes a greater return to the packer possible and a higher price can be paid to the producer. Finish is important in the same way. An animal that is too fat is wasteful so the extra feed required for the additional fleshing will not likely pay. On the other hand animals that are underfinished make less attractive cuts so the price is lowered. Body conformation is also important, in that the animal with good conformation has more pounds of high priced cuts so fetches more money in the retail trade. For this reason a higher price can be paid for it.

When you, as a producer, hear on the radio or see in the press that choice steers over 1,000 pounds are selling at \$23 a hundredweight, do you stop to wonder why they are selling at that particular figure rather than at \$15 or \$30? If you do you will quickly and correctly conclude that it is largely due to the demand and supply situation at the particular time; also that it will not be the demand and supply for beef in general but the demand and supply for particular qualities of beef, and the price of pork, mutton and meat substitutes.

The actual measurement of this demand and supply situation is an interesting story. The relative prices of different qualities of animals as indicated above are determined in fairly large measure by the demand for the different qualities of meat. The actual price—whether it is \$23 or \$22 a hundredweight is determined in part by the demand for the meat. The other determining factor is the demand for the by-products—hides, tankage, fertilizer, tallow and the like. Many by-products cannot be sold for as much as the packer pays for a pound of live animal. The amount that

he can get for the by-products naturally helps to determine how much he can afford to pay for the live animal.

Aside from the price of by-products, the housewife is the one who determines how much the packer's buyer can pay for a steer in the stockyards. The beef manager of the



A choice steer.

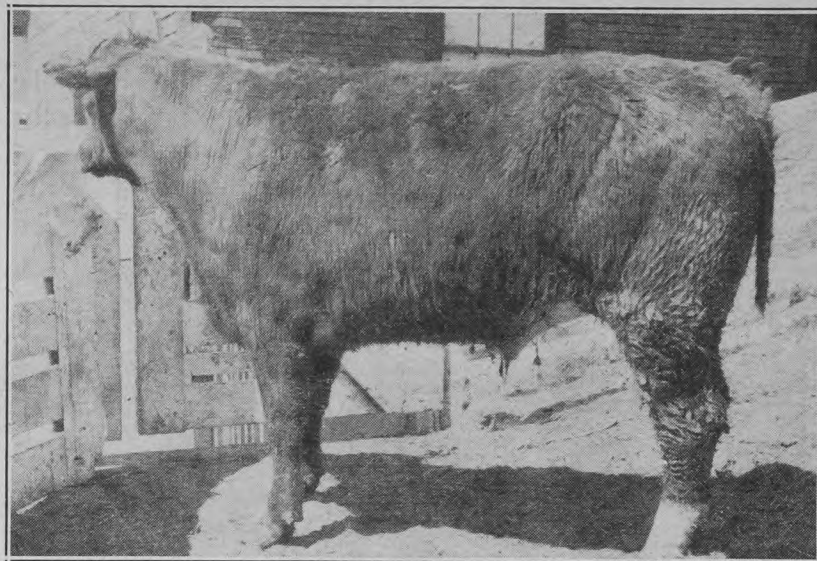
packing company knows approximately how much meat of a particular quality he can sell to the retail trade and he knows about what they will pay. Buying and selling goes on constantly. Technically the packer is not interested in the price that he pays or the price that he receives. He is interested in the difference between the two. At worst it must not be so narrow that it squeezes him out of business, and at best it leaves a margin of profit—wide or narrow as the case may be.

EACH morning the beef manager tells the buyers what price he can likely get for a quality of meat. With this information the buyers go out and after estimating the quantity and quality of beef that will come from an animal, they are able to calculate closely what price they will be justified in paying. Sometimes the beef manager will advise



These animals are so thin and poor that their meat is only good for canning or other manufacturing purposes.

the buyers that he has enough of a particular quality of beef and they will avoid that particular quality. On the other hand the manager may say he has all of that beef that he can sell at a price because of some softening

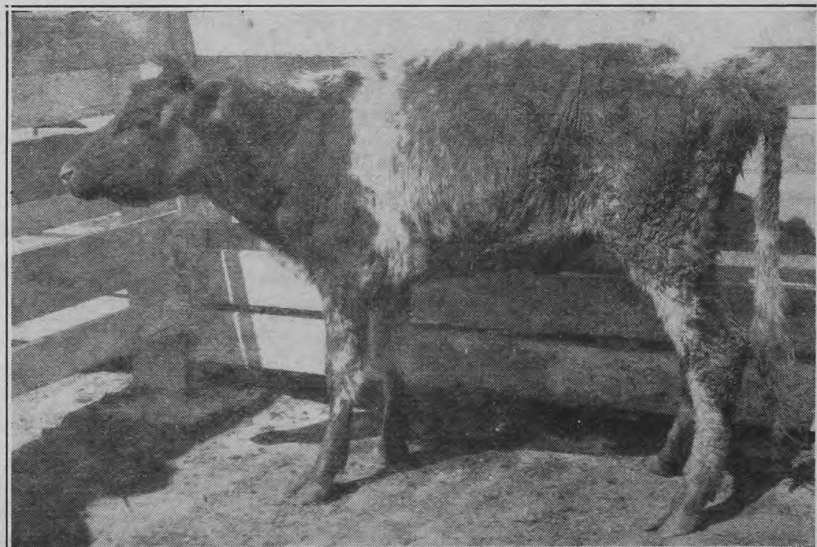


This steer is of good quality, but at 1,600 pounds is too heavy to command top prices.

of demand and they will make lower bids. If other packers are having the same experience the price will go down. On the other hand the manager may find that a particular quality is moving readily and may advise his buyers to go after that quality and to be ready, if necessary, to raise their bids. If other packers do the same the price will go up. Further to this, order buyers are in the market and if local buyers will not pay as much as these other buyers the cattle will go to markets in eastern Canada or to the United States. In some instances in the past year the demands of American buyers have determined Winnipeg prices. This is not typical.

If cattle are bought and killed one day, by the next day the beef department will have the statement as to how much those animals cost the plant as beef in the cooler. If someone has made a bad estimate and this cost is higher than the possible returns, buying prices will have to be lowered. If the reverse is true the possibility of raising the buying price will appear. Typically the cost in the cooler and the return from the carcass will be closely in step. If they are not the firm will find it hard to stay in business.

The effect of packers' profits on producers' returns is a matter of some interest. The distribution of the sales dollar of one of the large packing firms reveals that in 1949 84.42 cents out of each sales dollar was paid for raw materials, chiefly livestock and other farm products. Of the 15.58 cents remaining 7.02 cents was paid for wages, salaries and bonuses, 3.65 for services and general expenses, 2.69 for materials and packages, .83 cents for taxes, .05 cents for debenture interest, .34 cents for depreciation of fixed assets, .24 cents for company payments to an employee pension plan and .76 cents turned up as company profit from operations. This was on total dollar sales of \$314,918,888. In 1948 sales amounted to \$238,000,000 and the profit was .89 (Turn to page 38)





"I have heard enough of this papoose jabbering. I am chief here. I say Go!"

PART II

AS Spaulding had prophesied, the men were in camp waiting for the Moon-of-Hoar-Frost, when the still cold would allow them to run their fur-paths again. Watching them as they beat back their dogs and grinned a welcome to their white visitors, Norrys thought that surely Spaulding's prediction of trouble must be wrong.

In the council chamber some minutes later he was disillusioned.

By Spaulding's request he carried the white chest into the *kozgee* and opened it, ready. On their trip that chest had been their chiefest concern. It was a small, metalbound casket lined with double caribou hide and padded with wolverine fur. Four granite stones, carefully heated at each campfire, had kept the compartments warm and protected the precious vials of lymph from freezing.

A dozen of the more important Indians came filing in to hear what strange mission had brought the white men to their camp. They sat cross-legged on deerskins, their swarthy faces upturned, their eyes sparkling in the gleam of a rude fish-oil lamp.

In front of them crouched their leader, Apah-Stamik, the Bull Mink. He was a middle-aged chief of exceptionally big body, powerfully muscled, his eyes small and beady, his face a gargoye. Norrys had heard many tales about the Bull Mink, and none of them good. He was the one chief who had

not yet acknowledged police authority. For stubborn, perverse brutality he had a reputation clear to the Thunder Hills. He ruled his band as he ruled his own lodge—with an iron hand. He had four or five wives, all prematurely old and broken.

In his belt he carried a symbol of his brutality—a "squaw-club." It was the first time Norrys had ever seen a man carry one openly and brazenly, for the police had largely succeeded in stamping out the atrocious practice of wife-beating. From a few stray hints, Norrys had gathered that Apah-Stamik was defiant in other ways to the police, and that his defiance was egged on by Lem Fullerton for certain reasons of his own.

Almost before he knew it, Norrys was witnessing a long-deferred clash between the Sergeant, lone-handed, and the Chief, backed by a dozen warriors with forty more just outside the lodge.

Facing the Indians, Spaulding stood erect in the middle of the big lodge, his stern face unsmiling. The light from the fish-oil lamp glowed resplendent on the vivid scarlet of his jacket and enhanced the golden-yellow stripes of his trousers. There was some intangible air of command about him, a power, a towering mastery, which Norrys had

never noticed before. He dominated the *kozgee*. He drew the eyes of all of them, and they listened for him to speak.

In crisp, perfect Cree he explained about the small-pox. About its occurrence, eastward, during the Moon-of-Hardening-Ice. About it breaking out and spreading westward. About its deadliness. About the necessity of vaccinating every man, woman and smallest papoose in mother's hood.

As he pictured the red death stalking into the camp, creeping from lodge to lodge, reaching a long hand in through the flap-front of the teepees, the dozen warriors paled and squirmed in their seats. But to the powerful harangue Apah-Stamik listened totally unmoved. A faint grin of derisive disbelief grew upon his lips as he listened.

He was plainly unaware of the scientific facts, and stubborn in his blindness, and above all personally hostile to the yellow-striped Sergeant. His big bulk, his iron authority, loomed squarely athwart Spaulding's purpose. Of the fearful consequences to the women, children, hunters of his band, he was entirely ignorant.

WITH half an eye Norrys saw how things were shaping. The warriors were eager enough to be vaccinated, but they were under their chief's heavy-handed rule and necessarily would take their cue from him. The issue sharpened down to a struggle between Spaulding and Apah-Stamik.

When Spaulding finished, the Chief blinked his eyes slowly.

"I have heard much papoose-jabbering about this red death. I am not afraid of it. For a score of Great Moons I have pitched my teepees here in these forests. It has never yet visited my camp. Therefore it will not come."

That kind of superstitious reasoning was very familiar to Norrys. But anger and exasperation welled up in him as he heard the guttural sentences. The Chief was deliberately balking Spaulding, taking a perverse delight in showing up the Yellow-stripe.

Spaulding did not answer. He stooped to neither anger nor persuasive pleading. He was colder and more impassive than Apah-Stamik himself.

"Moreover," the Chief went on, "this vaccination is evil medicine. Once a hunter of my band, a famous moose-tracker, allowed himself to be pricked in the arm by the magic needle. The next moon when he went hunting, a wounded moose trampled

and gored and killed him. Is that not proof it is evil medicine?"

Still Spaulding said nothing. He crossed his arms and waited in stony silence. The warriors seemed to be veering toward their Chief's viewpoint. His crazy reasoning was logic to them.

"Moreover, the black-robed prayer-man warned us against this medicine-magic—"

"That's a lie!" Norrys burst out in faltering Cree. "I have talked a score of times with Father Donnelly, and I know what he tells you."

Apah-Stamik showed no chagrin at Norrys nailing his lie. He kept his eyes on Spaulding. He was beating around for some excuse to refuse. His next question staggered Norrys.

"If we allow you to prick us with the magic needle, how much are you willing to pay us?"

There was an interested stir among the dozen Indians at the mention of possible dollars. Norrys started and nearly swore at the preposterous question. Why didn't Spaulding say something, argue, plead? Did he consider it futile to bandy words? Was he accepting defeat?

The silence lengthened. Apah-Stamik broke it finally with an emphatic gesture and still more emphatic words.

"Then if we get paid nothing, I shall not allow you to go about my men and squaws and papooses

with your needle. It is not in the treaty. I am Chief here. I say *Go!*"

An Indian snickered at the spectacle of their Chief defying the Yellow-stripe. The others joined in, chuckling throatily.

In sudden alarm Norrys glanced at Spaulding. The latter's silence amazed and puzzled him. It was not like Spaulding to let helpless women and children suffer from a Chief's perverseness. But what could a lone man do?

"Spaulding!" he burst out. "For God's sake, argue with him, promise him money, anything—"

Spaulding turned his head.

"Argue? There's only one argument this bull-headed ignoramus will listen to. If he were alone, I'd let him rot. But here's a camp of men and women and kids. They're children—the lot of them. They have to be treated as such. But this friend of ours, the Bull-Mink—"

He took a sudden step forward, reached down, grasped Apah-Stamik by the collar and yanked him roughly to his feet. The Chief struggled furiously to break free. He crashed a powerful fist blow to the Sergeant's face. But Spaulding held him with one hand. And the next instant, before the stunned Indians could recover and grab their weapons, a black automatic prodded the Chief under the fifth rib, and Spaulding's cold voice stood out above the ominous, swelling noise.

"Quiet down, you! I can crook my trigger-finger and blow your heart out. That's what I'll do—if anybody makes a move. Order your men to come up one by one. Order your whole camp in here, one by one. I'll count heads. If any are missing, you'll pay for it. Norrys, hand me that needle a moment. Then get busy with it yourself. This camp is going to be vaccinated!"

NEEDELE in one hand and revolver in the other, Spaulding vaccinated the Bull Mink first of all. The very effrontery of his act overawed the rest of the warriors. They admired courage and fearless purpose in anyone. Then moreover, they realized that the Yellow-stripe, at the first hostile move, would kill their Chief before they could kill him.

Spaulding took no chances. He pulled Apah-Stamik aside and stood covering him, alert and tensed—prodding orders out of the Chief with the muzzle of his automatic.

All the next hour Norrys worked feverishly with the needle. When the little rabbit-hunter, last of a long line, fled wailing from the *kozgee* and a trustworthy *metis* announced that the whole camp had been vaccinated, Spaulding thrust his revolver into his pocket, coolly turned his back on Apah-Stamik, picked up the white chest and strode out to the *komatiks*.

On eastward, fighting their way through a frozen wilderness of tamarack and heavy spruce and snow-buried muskegs, they searched out Cree and Chipewyan bands, visiting five encampments in quick succession.

Norrys had to keep stern hold of himself. The patrol was drawing heavily on his physical reserve and still more on his moral strength. In his weakened body condition, the loney white solitude, the blind, swirling storms that struck them, the weird

play of the aurora overhead during their night marches, began to prey upon him.

Strange, dreamlike fantasies flitted across his brain. Strangest of them all, the invisible enemy that he and Spaulding were racing—at first a mere abstraction in his mind—gradually became a shadowy apparition he could envision somewhere on ahead; and then, in ever clearer outline, like a huge figure emerging from a cloud of frost-fog, the apparition took on tangible, incarnate form and became a vivid enemy of flesh and blood.

He realized that the fantasy was born of a tired body and overwrought mind, so it did not trouble him greatly. Besides, with every camp they whipped past, the possibility grew that this patrol of Spaulding's might win a complete, crashing victory over their enemy, however huge and sinister that spectre might be.

THE SERGEANT OF LONE CREE

by WILLIAM BYRON MOWERY

In this second chapter of a thrilling northern drama, Spaulding encounters opposition to his purpose from an Indian chief and Norrys gains insight into the heavy and unknown secret which burdens his companion's mind

In spite of a merciless pace the dogs were holding out well. Satan, the great black leader of the police huskies, was a team in himself. The savage, stormy weather which slowed them down seemed a foe, but in reality it was a blessed friend. For, as Spaulding pointed out, it tended to keep the Indians in their lodges and prevent intercourse between the bands. Already the patrol had built up an impassable barrier between the disease and the Thunder Hills country and checked the menace of it spreading westward. Already they had visited three-fourths of the Indian encampments and were within striking distance of Lac aux Mouffettes, with only three encampments on ahead.

Sometimes, when he had to give in and ride the *komatik*, Norrys wondered why Spaulding had asked him to come along on this patrol. Except for that hour at Apah-Stamik's camp, he had been of no help. In fact he had been a hindrance. He believed that Spaulding had brought him along to have company—someone to talk to. But why, then, did Spaulding not talk? There were days when he hardly spoke a dozen sentences.

ANOTHER thing Norrys keenly wondered at. Whatever happened now, Spaulding had achieved a substantial success already. But that did not lift the unknown, unguessable burden from his shoulders. All he had done seemed of small moment to him. Sometimes at night when Norrys

awakened, he still saw Spaulding sitting over the campfire, lost in thought, a dead pipe in his teeth.

A hundred times the question was on Norrys' lips: "Spaulding, what is troubling you? Tell me; maybe I can help." But always he remembered what Spaulding had said back at the Fullerton trading station: "I'll tell you if and when I have to. It's my hope I may never have to." So the question went unasked, and he trudged along, trying to make himself as little hindrance as possible.

They stopped one noon on the bank of a large river coming in from the northwest.

"Riviere Epinette," Spaulding remarked. "Two miles below us, at the muskeg edge, it branches into a dozen forks. The Epinette Crees are camped somewhere in that delta. We'll cut around and find them."

They dropped down the frozen stream to where it debouched through its many channels into the tamarack muskeg. They should have come across fresh snowshoe or *komatik* tracks at the forks; but they saw none. Searching systematically, one channel after another, it was late afternoon before they found the camp of the Epinette Crees.

They stood on a little mud volcano and looked down at it—a cluster of twelve teepees in a grove of black tamarack.

A pack of wolfish "crackies"

roaming unrestrained through the camp, howled dismally when they winded the strange dogs. But no one came out; no human figure appeared. The dim old paths radiating on the south were nearly blown shut. They had not been used in many days. The toboggan chutes down the mudhill slope were abandoned; the tiny sleds half-buried in drift at the bottom.

From two of the twelve teepees a thin spiral of smoke stood up. The others were lifeless and deserted. At the east and west approaches to the camp two tamarack saplings had been lopped of their branches. From their gaunt tops—conspicuous warning to any visitor—fluttered a red rag.

For a long minute Spaulding and Norrys gazed down at the sinister red sign, at the stricken camp on that bleak wilderness shore. Slowly they realized that here at last, after their long, valiant race, they had met their grim enemy.

It was Spaulding who broke the silence.

"Stay here, Norrys. I'm going down. But you—don't go any closer."

HE lifted a small medicine kit from his *komatik* and strode down the slope. Norrys watched him going from lodge to lodge. In the two from which smoke still spiralled he stayed many minutes. Presently he came back up the hill again, stopping a dozen feet away from Norrys.

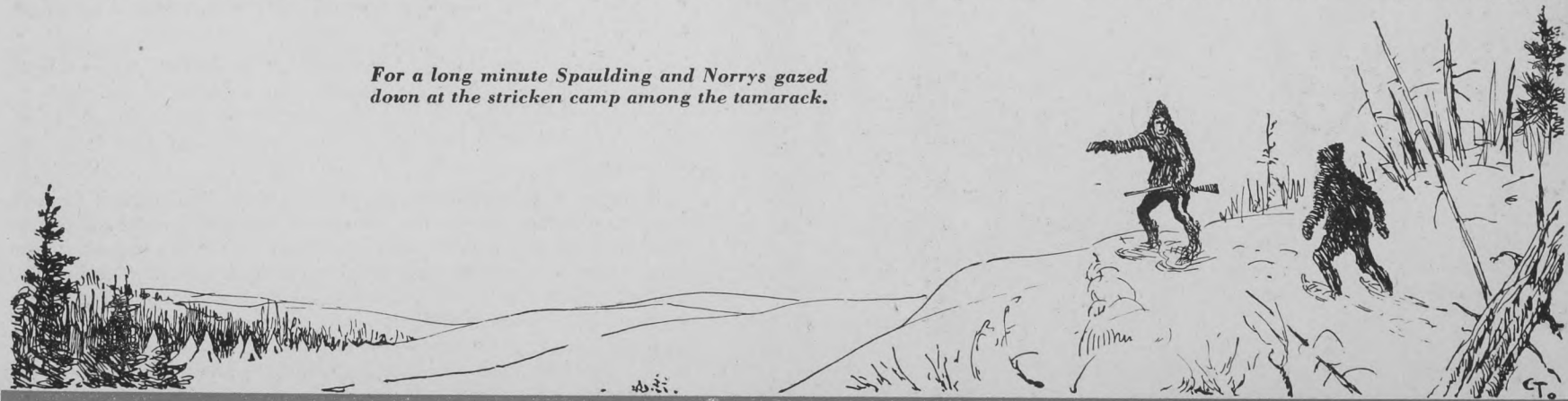
"Five of them are left," he said, his voice constrained and harsh. "A couple of men, a woman, a girl and a small tot. There's nothing we can do. They've food. I left them medicine. The men are up and about again, able to take care of the rest."

"But those other two camps—between here and Aux Mouffettes?"

"Wiped out. Complete."

Norrys cleared his throat. He saw that Spaulding, for all the latter's self-control, was hard hit; and he attempted consolation. (Turn to page 58)

For a long minute Spaulding and Norrys gazed down at the stricken camp among the tamarack.



COPRA

When the Canadian government legalized margarine it enabled this product to compete with the dairy cow in furnishing the spread for the breakfast table

from A. L. KIDSON

being. In some countries, as in the United States where cottonseed is plentiful, these alternatives will always be important ingredients of margarine. Also chemists, profiting by the skilful manipulations of the fuel oil technicians, are learning to crack vegetable oils to alter their physical properties, so that the butter substi-

water, and from 30 to 40 per cent oil. After the husks are removed and the nuts broken, the pieces are dried in the sun or in kilns. This drives out most of the water. The resulting product looks brown and shrivelled and has an oil content of 60 to 65 per cent.

To extract this valuable oil, modern mills go through the following process, or some variation of it. The crude copra is passed over a magnetic separator to remove nails or other bits of metal which might damage the crushing plant. Then the copra is ground fine and heated to 180 degrees. It is then passed through an expeller which forces out most of the oil. Lastly, it is subjected to extreme pressure to remove the last traces of oil.

A recent survey in the Fiji Islands showed many bad features of production on native holdings. There were primitive drying methods with kernels spread out on green leaves on the ground with no protection



Picking coconuts in Zanzibar, East Africa. The natives use a crude harness around the bare insteps to keep the feet working together as a vise.

Right: A government inspector grading copra. Small samples are taken and mixed. The product is then examined for color, cleanliness, smell and dryness.

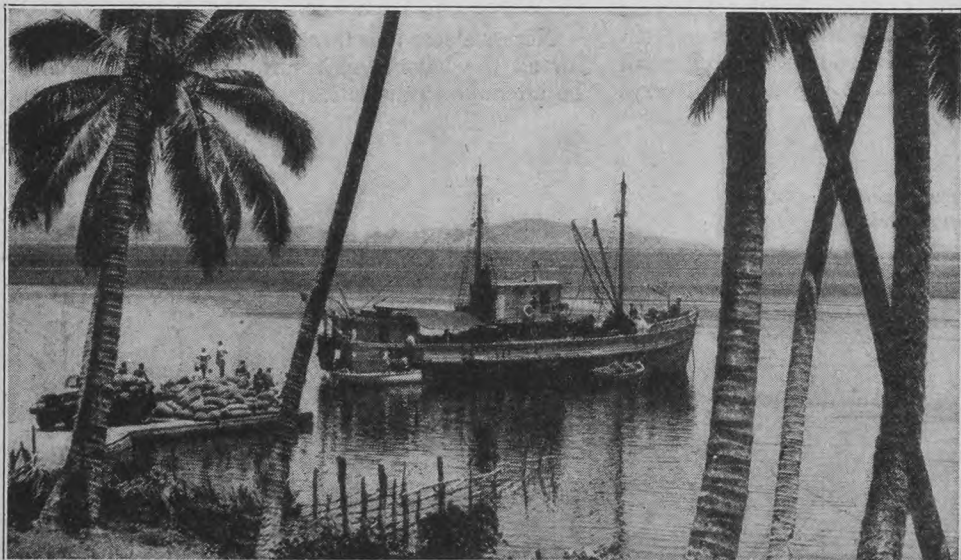


THE lawmakers of Canada, in their wisdom, decided last year that regardless of the effect it might have on the dairy industry, margarine should be made available to the consumers of this country. In easy, prewar times when commodities of all kinds could be had in abundance, this would have meant heavy imports of coconut oil, as this is one of the favorite fats with makers of margarine. The war in the Pacific disorganized the production of and trade in copra, the dried meat of the coconut from which the oil is expressed. Other oils, notably cottonseed, soybean, and sunflower filled the void for the time

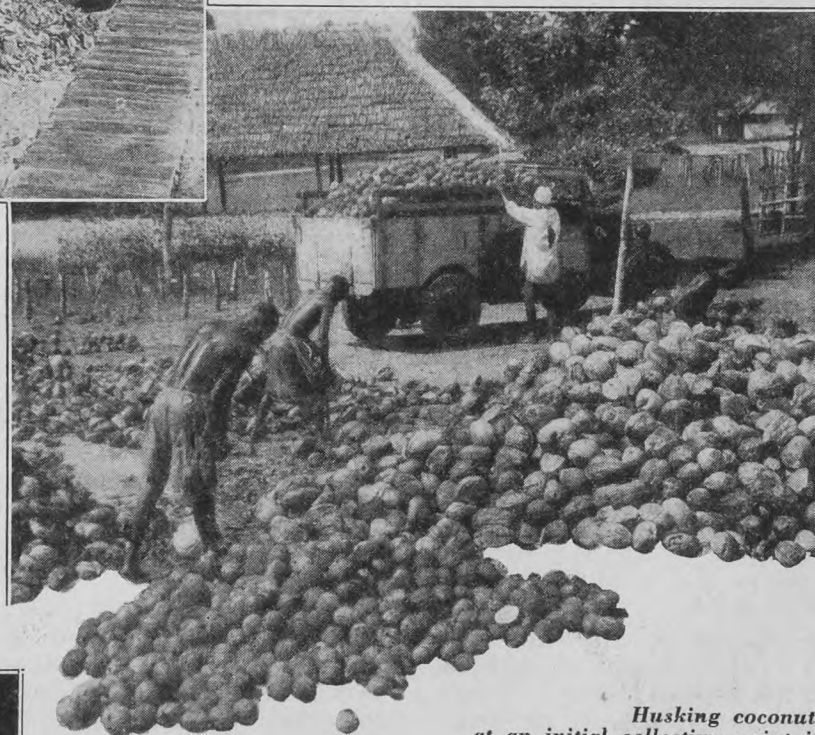
tute of tomorrow may come from sources little suspected today. Until this stage of chemical advance is reached, however, one may safely anticipate the return of coconut oil to its former place in margarine manufacture as trade recovery in the Pacific is attained.

Coconut kernels fresh from the tree are made up of about 50 per cent

Small coastal vessels transport the copra to the main ports for trans-shipment. This scene is in the Fiji Islands. Because coral reefs surround most of the islands, goods are carried from the dock to the lugger in row boats or rafts.



Plant selection as practised by black farmers. Selected coconuts are germinated above ground. A green shoot thrusts upward through the fibre husk, and roots go downward into the ground. At the right stage the selected stock is transplanted.



Husking coconuts at an initial collecting point in Zanzibar. The husk is breached over a sharpened stake driven into the ground.

against rain or dew. Bagged copra was left stacked on open wharves or transported in leaky craft, with the hatches open in wet weather. Crude "smokers" often home-made were in use for drying nuts. All of which adds up to loss both in the quantity and quality of the oil produced.

But most of these things have been set right. Agricultural advisors have taught the natives how to control the growth of fallen nuts. The Malayan dwarf palm which bears in four years instead of the usual eight or nine has been widely introduced. Grass planting and afforestation has proceeded apace to check the loss of soil through erosion. The government helps, too, by supplying rice and other crops which can be used to diversify the agriculture of the islands. Production has been stepped up. Tropical growers are looking for a bigger market.

Bottom right: Snowberry in a heavily infested pasture at Morden, completely killed by 2,4-D.

DURING the spring and early summer of 1949, some 25,000 prairie farmers, half of them for the first time, used the comparatively new and highly popular chemical 2,4-D to control weeds in their growing grain crops. Of the 8,200,000 acres treated, negligible damage to crops resulted, with generally a good weed killing job done. This season probably twice as many farmers will be using this method to combat weeds on some 15 million acres. This marks a tremendous forward step in the control of what is now quite generally conceded to be responsible for the major crop loss over the whole of the cultivated area of western Canada.

When one stops to think that it is only five years since we first heard of the hormone Dichlorophenoxy-acetic acid, happily christened 2,4-D, it is amazing how it has caught on. For two years after its introduction experimentally in 1945, it was thought of and used almost exclusively to eradicate dandelions and other lawn weeds. The widespread adoption of the use of this chemical both on this continent and in other parts of the world is unique in the annals of agriculture. No product or practice associated with farming has ever before come into general use in so short a time.

Before proceeding with some of the important points to keep uppermost when using 2,4-D to the best advantage, it seems well to look at it as from a bird's-eye view. 2,4-D and its companion chemicals are not a cure-all of the weed problem in this or any other land.

First, weeds belonging to the grass family, of which wild oats, foxtails, and quack grass, serve as examples, are resistant. Were this not so 2,4-D could not be used on cereal crops. This "selective" factor makes it useful in the wide field to which it is of primary importance. Secondly, while most perennial weeds can be controlled in some measure when treated in a grain crop, in the main this large and troublesome group shows marked resistance to 2,4-D when considered from the standpoint of eradication.

On the other hand, with few exceptions—wild buckwheat being a good example—nearly all annual weeds are susceptible, especially if treated when in the young and active growing stage. Users of 2,4-D will do well to consider the chemical as a



From 2,4-D to 2,4,5-T

by H. E. WOOD



Old facts about 2,4-D confirmed and new facts about another weed killer useful for treating woody plants

useful supplement to the many recognized and tested methods of weed control that can be summed up in a phrase, "good farming."

While very potent, 2,4-D at the same time is a comparatively safe chemical to handle. It is non-

Treated and untreated portions of same wheat field at Borden, Sask.

Top left: Nearly half a mile from the turbine sprayer, these trees were severely damaged.

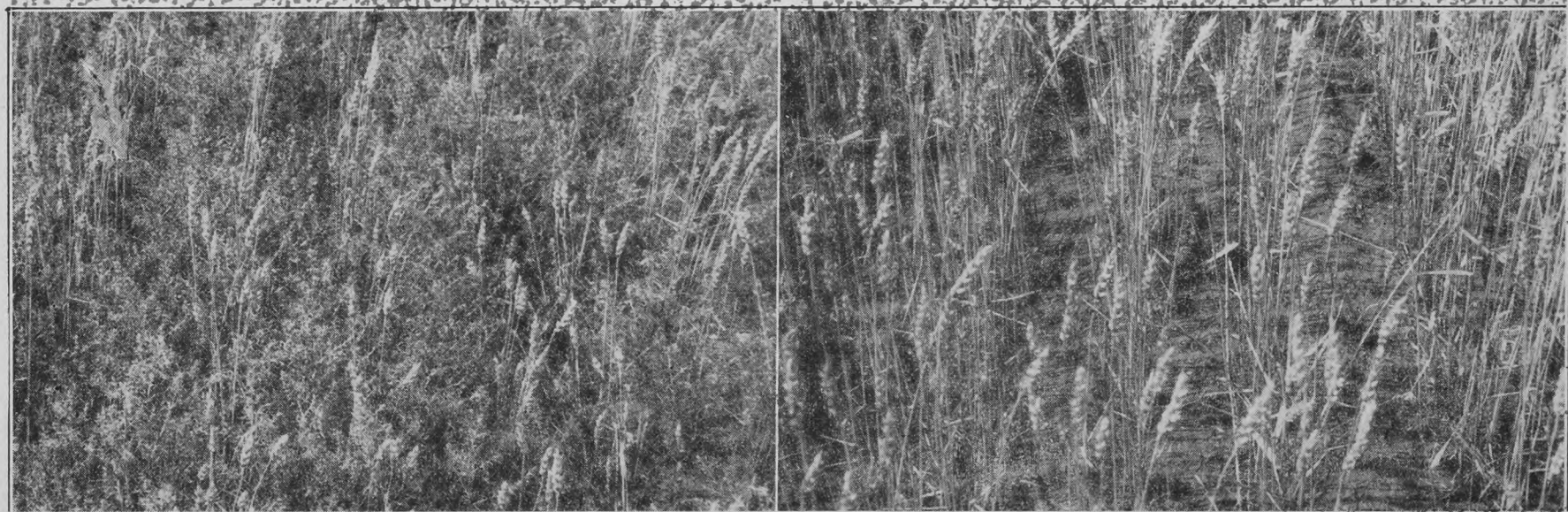
poisonous to humans and animals, nonflammable, and noncorrosive. However, when used in the vicinity of susceptible vegetation care must be exercised. Drift from either spray or dust can cause, and on occasion has caused serious damage. Last summer when spraying with a turbine a field just outside the town of Morden, Manitoba, damage to trees and sensitive garden crops occurred for a distance of half a mile or more. From experimental studies carried out in Texas, investigators found that one ounce of 2,4-D acid if evenly distributed over 35 acres of cotton—one of the most sensitive of crops—would seriously injure every cotton plant.

Great care should be taken to cleanse thoroughly any spraying or dusting equipment that may have contained 2,4-D if it must be used to apply insecticides or other chemicals to crops susceptible to 2,4-D. Not a few cases of serious damage to horticultural crops have followed the use of such equipment, sometimes even where the operator considered he had taken ample precaution in removing all traces of 2,4-D.

Turning now to the use of 2,4-D, one of the first moves will be to make a choice of formulation. This lies between the amine and ester; sodium salt has pretty well given way to these two more effective forms. The amine will be found rather less harsh on the crop than the ester, likewise slower acting on most weeds. The ester in addition to penetrating the plant tissue quickly, which is an advantage especially if rain should follow immediately after treatment, is more effective on some of the more difficult to kill weeds. Under most

circumstances the dosage of amine should, in terms of acid, be 1½ times that of ester. When so used, and instructions as to dosage, etc., are followed, the end results from these two formulations will be approximately the same.

Application may be as spray or dust. Both methods have their advocates. Dusting fits in particularly well where there is a scarcity of water; where there is little likelihood of damage to susceptible crops from drift; and where large acreages must be treated in a short period of time. Where conditions approach the ideal for treating with 2,4-D, the control of weeds by (Turn to page 74)



a HOUSE

that Could Grow

by EDWIN RAINES

FEATURES OF THE PLAN

Provides complete unit at low cost.

May be built in three stages.

Designed for a growing family.

Maximum use of basement space.

Ample storage areas provided.

Provides for modern conveniences and comfort.



The finished unit showing extensions to both ends.

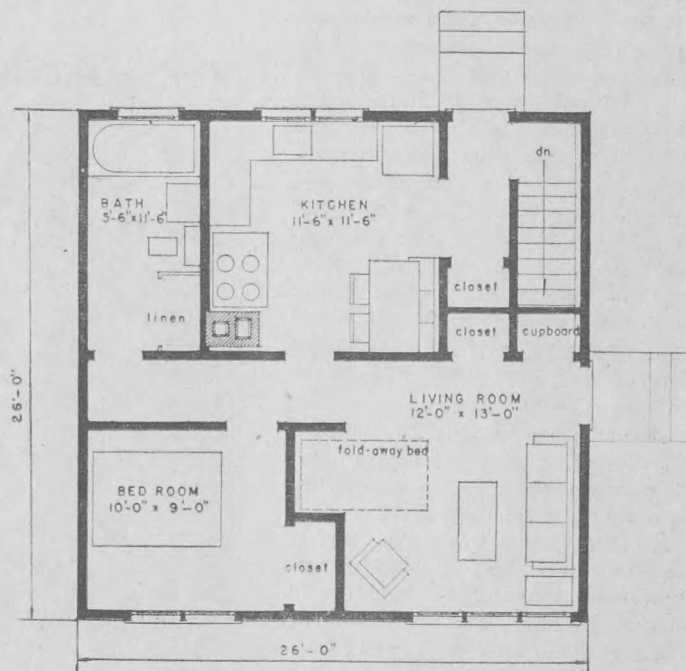
THE Country Guide Plan No. 4 shows a farmhouse which may be built in stages. It will appeal to the man with a small family, who possibly cannot afford to build a more expensive house at present. He will have the satisfaction of knowing that it can be enlarged later as his family's need or his own desire for greater accommodation grows.

The plan is designed for economy in construction and for the best possible use of the space provided. It makes provision for modern conveniences and comfort from the start. Two floor plan drawings are shown here. One is for the basic small house of one-storey type with full size basement. The other, an interior perspective, shows the house with two additions, one on the west end and the other on the east end of the original unit. The prospective home builder has a choice of building this house in three stages or all at once. The determining factor is likely to be the funds he has on hand or in prospect, for a new house.

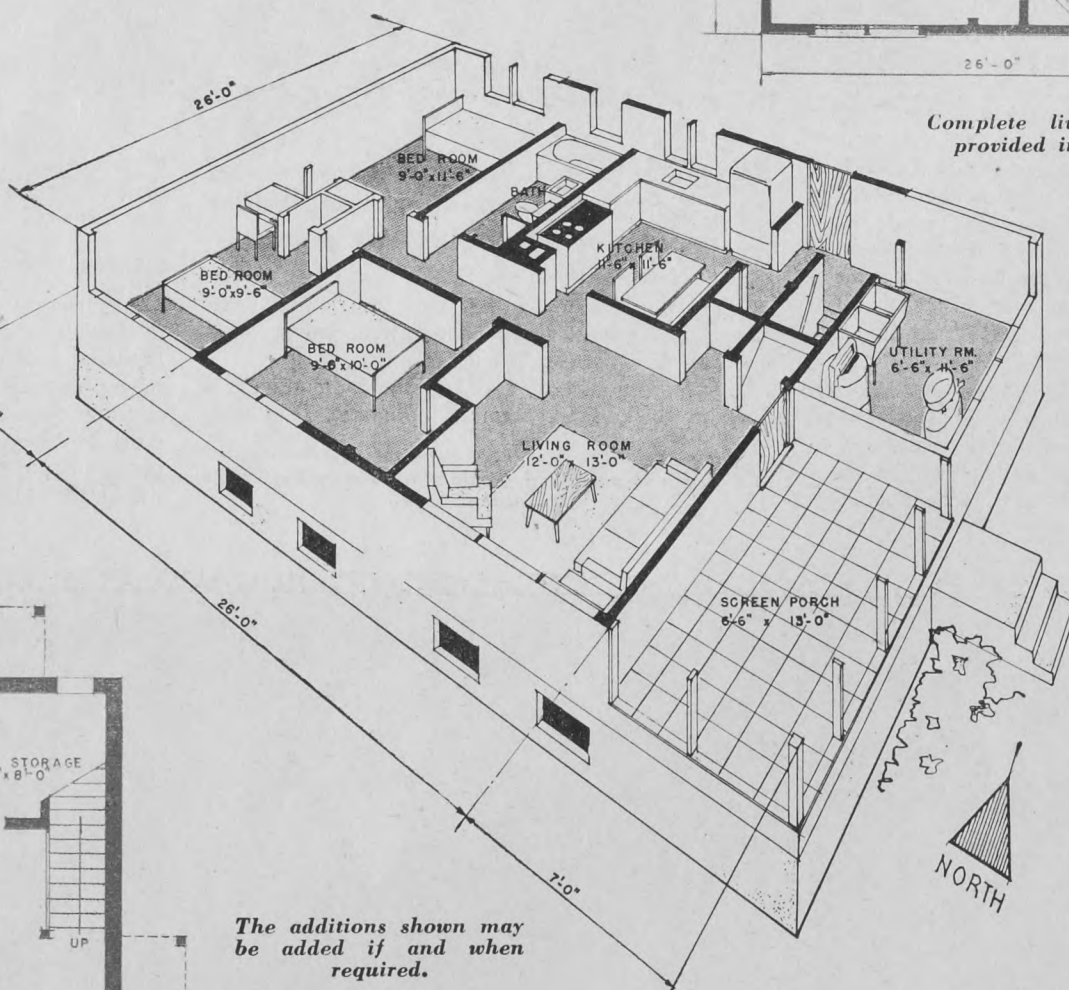
The over-all dimensions of the basic unit are 26'-0" x 26'-0". It provides a kitchen, bath, one bedroom and living room, the latter with a closet for a fold-away bed, which may be used on occasion for a guest. Where a home builder does not desire this feature, then the space could be made available as an extra clothes closet off the bedroom. In this plan we see ample provision of closet or cup-

board space in each and every room. Even the space over the stairway is turned to good use as a built-in cupboard. The slanting wall could be fitted with shelves or drawers of varying widths, which would serve to take care of many odd items which the housewife wishes to store.

This plan features the maximum use of basement space, highly desirable in a small house. A recreation room, utility room and lavatory are provided in addition to the usual areas essential for furnace, cistern, fuel, fruit and vegetables. The utility room provides for extra tasks connected with handling of dairy and poultry products, doing the family wash, etc. Later when the addition on the east provides for a first floor utility room, this may be used for any one of a number of purposes: as a bedroom, office, workshop or (with the partition removed) as an extension of the recreation room.

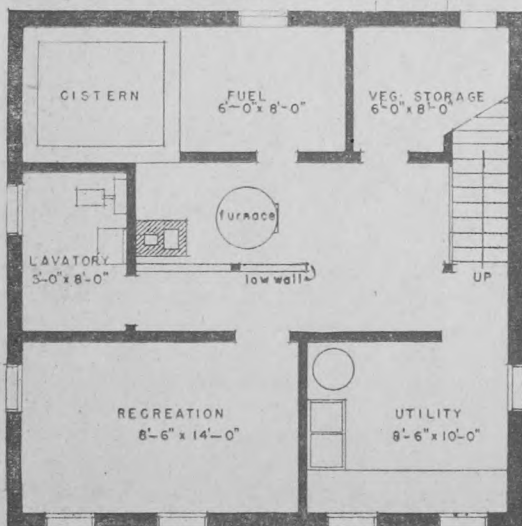


Complete living facilities are provided in the basic unit.



The additions shown may be added if and when required.

The recreation and utility rooms are suitable for sleeping accommodation.



The recreation room too will serve in many ways. In the first stage of building, it may be welcomed as an extra bedroom. The provision of a lavatory in the basement makes for convenience in using either or both of these basement rooms as sleeping quarters.

It must be remembered that a sleeping room in a basement must comply with National Housing Act standards. Windows must be at least 10 per cent of the over-all floor area. Care must be taken in construction that the walls and floor will be dry by providing proper drainage. The inside wall should be "fired out" from the concrete foundation and moisture-proof insulation and paper installed between the two walls. The room should have a wooden floor built on "sleepers" which are set in the concrete. Proper heating of such an area may require a forced-air attachment to the furnace.

It may not be feasible in all western areas because of high water levels, poor drainage, etc., to make use of basement space as indicated in this plan. In such cases, the addition to provide extra bedrooms will likely be given early consideration.

Note the ease with which the two-bedroom addition may be made. A 9'-6" addition is made on the west and a door is cut into the

(Turn to page 82)



IT is not often, perhaps, that the heading for an article is selected before the article is written. In this instance it was, and I think I have found one which suits J. M. (Jack) Fraser of Streetsville, Peel County, Ontario.

For some time I thought of using "Ontario Master Farmer," but I concluded that such a title would not suit either Jack Fraser, or Peel County, or me. It would be too flamboyant for Mr. Fraser, much too generalized to suit Peelites; and as for me, I am not sure that I could define a master farmer. So, remembering the Conservative history of Peel County, which is even now represented in the Federal House by Gordon Graydon and in the Ontario House by Col. The Hon. Thomas L. Kennedy, Minister of Agriculture, I chose discretion as the better part of valor and chose the most conservative title I could think of.

Every Peelite will agree that Peel County is a grand county, either to live in, or to come from. Based on the shore of Lake Ontario, it adjoins the County of York, though remaining at that nicely calculated distance from Toronto and the dirt and grime of a big city, which is still close enough to attract commuters to its southern portion. At the same time it has been able to develop intensive and specialized production of fruits and vegetables grown under the influence of a beneficent lake shore climate, and still be within easy hauling distance of Canada's largest urban market. Elsewhere, Peel County borders on the Counties of Halton, Wellington, Dufferin and Simcoe, stretching northward toward Georgian Bay. More or less in the centre is the township of Chinguacousy, in the southern portion of which is located the town of Brampton, the County's largest urban centre.

It was from Brampton that I was driven out on a blizzardy December morning to Spring Farm, the home of Jack Fraser. My guide, and friend in need, was Bruce S. Beer, Agricultural Representative for Peel County. Mr. Beer is the eleventh in line of succession among the agricultural representatives who have served the County of Peel since the first one, W. H. J. Tisdale, now Assistant General Manager, Canadian Co-operative Wool Growers Ltd., Toronto, began work in the County in 1913.

It was in fact, one of Mr. Beer's predecessors, who was responsible for my visit to Spring Farm. He is C. E. Graham, now Deputy Minister of Agriculture for Ontario. The previous day, when I had said that I would like to get a story for Country Guide readers, of a really good Ontario farm, located reasonably close to Toronto (because time was limited) and with its merit based on the diligence and ability of the owner rather than on inherited wealth or money accumulated elsewhere, he directed me to Spring Farm.

This farm is located on about a twenty-mile stretch of fairly level land. The soil is described by its owner as a strong clay loam. Its disadvantage, if any, lies in the importance of not working it when

J. M. Fraser receives the Premier Exhibitor Award for the second year in succession at the C.N.E., Toronto.

it is too wet. Not much of this level stretch of country needs tile drainage, but there is some on Spring Farm. When the land is well farmed, yields are excellent and Mr. Fraser told me he had had 75 acres of oats average as high as 75 to 90 bushels per acre.

THE Indian name of the township, Chinguacousy, means "Land of Big Trees," which, in southwestern Ontario, is very likely to mean first-class, well-watered livestock country. If you find such land within 50 miles or more of Toronto, it probably means dairy cows, and Spring Farm has a daily quota on the Toronto market of 13 cans of milk. On Spring Farm it also means some of the best purebred Holstein cattle in Canada—but of this more later.

When the Frasers first came to Canada I did not learn, but they came from the North of Ireland, and Mr. Fraser believes that much earlier—about the 15th century—the family was French. If this is

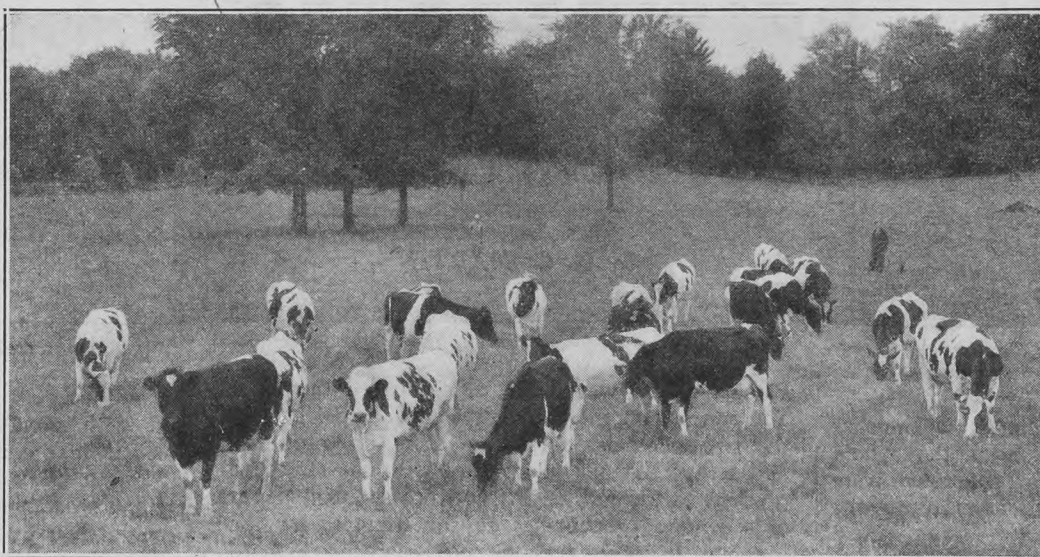
true, it antedates the history of Protestantism which dates from the early 16th century, and probably, also, the establishment of the Tudors on the throne of England in 1485.

Even in Peel County the Fraser family is an old one, and it would not appear that they have moved about much. Jack Fraser's grandfather farmed up the road a way from Spring Farm. His father is just across the road and one brother operates the home farm. Another brother also farms not far away. When young Jack wanted a farm of his own in 1928 and decided to buy the 200 acres he now occupies, some of his family, I am told, advised against it. It was a large farm as Ontario farms go, and his financial resources were limited. He went ahead nevertheless, and was evidently able to persuade the Ontario Farm Loan Board to carry his name on the record of borrowers for quite a long time.

A liking for livestock came to him very early. As a boy he used to show general purpose horses; and even when 14 or 15 years of age he drove around all alone to local fairs and exhibitions, as far as Woodbridge, which was away across the County boundary into York County. He told me that he used to make about \$20 per day on these trips.

When I visited his farm, however, I heard nothing about horses. Today the farm carries 65 to 70 head of Holstein cattle. All cattle are entirely fed from the 200 acres, except for necessary amounts of high protein concentrates and other supplements. With the aid of a milking machine he takes the milk from 25 cows to fill his 13-can quota, the remainder of the herd consisting of dry cows, young stuff and breeding stock. Only twice in 22 years has Mr. Fraser bought any oats. The last time was following the dry season in 1948, when oats only went 30 bushels per acre, instead of the usual 50 to 60 bushels. Occasionally he has sold a few oats for seed, but mainly he relies for

milk production and the adequate feeding of his herd on hay, pasture, lots of corn silage and oats, together with some bran, beet pulp, oil cake and a small amount of soybeans, which he purchases and mixes himself to narrow the ration. He believes in plenty of hay and corn silage, with strong emphasis on alfalfa or clover hay, especially the former. In a very dry year he finds that the deep-rooted alfalfa stands up and yields better than red clover.

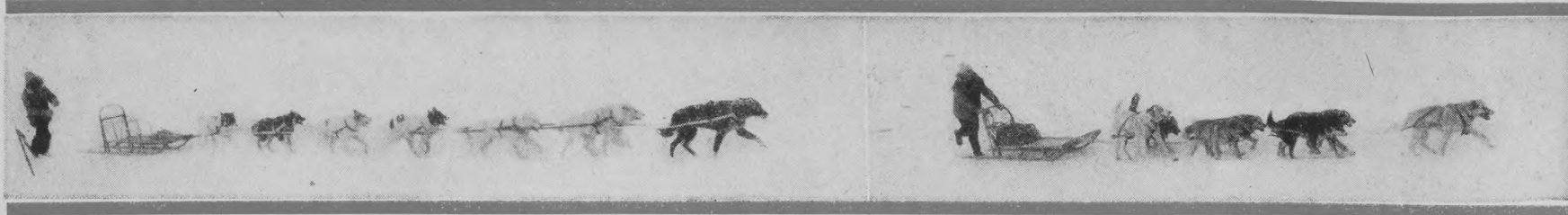


Part of the purebred Holstein herd on pasture at Spring Farm.

by H. S. FRY

This Ontario farmer and premier breeder considers milk production his main business

I ASKED Mr. Fraser what kind of cropping plan he had found it advisable to adopt in order to provide himself with plenty of feed, and at the same time maintain his soil in good condition. He said he tries to get two years of hay and one of pasture, after which he plows for corn, to be followed by oats for one or two years, and then seeds down one-half of the land to mixed hay, principally alfalfa and clover. In this way he has about one-half of his land, or approximately 100 acres, in crop all the time. He grows fall wheat for the straw to the extent of 15 or (Turn to page 67)



RUMOURS surrounding the return of the first dogs from Cranberry Portage were mounting as high as the fever of the thousands of spectators crowding into the finish line. "Heard is in the lead." "Ouellette is 'way out in front." "One musher has three dogs on the sleigh." "That 'plane just circled over Big Eddy—he should know how long they will be." All the bets were placed, no one would risk a wager now; this was the closest dog race on record. It was the finish of the 1950 Canadian open championship dog race at The Pas, Manitoba, undisputed championship dog race of the world.

The marathon races started at The Pas in 1916. Since the inauguration of The Northern Manitoba Trappers' Festival in 1948, the race has been the main event—a straining competition between the best mushers and best dogs of the northern wilds—a competition for which dogs are trained for months, special hardening feed is given and routine work is laid aside for training. "It must have cost my husband \$700 in feed and in time off from work," said Mrs. Ouellette, wife of the C.N.R. musher who came in first. He had just won the honor, the trophy and the \$1,000 prize money of the 1950 running. She had spent the sleepless night at Cranberry Portage caring for the dogs while her husband rested.

SPECTATORS and competitors converged on The Pas from all directions. The Festival brought in a cavalcade of cars from Flin Flon, a 'plane load of guests from Prince Albert, Governmental representatives from

On the trail with seven dogs using the tandem and Alaska hitches.

from many communities. In support of her campaign they had each donated a pelt of fur. The parade touched a match to the pent-up excitement and the whirl of contests which followed.

Each day saw crowds of people cheering the competitors in the tests of woodsmen's prowess. There were winter sports in the snow and on the river. Each night saw the same people feted at banquets, welcomed at social gatherings and entertained at dances in the many teeming halls of The Pas. People love good sport and clean competition. The evenings maintained the tempo of the days with oratory, music and displays.

Winter sports in the north differ greatly from those recognized in the Laurentians and Lake

vengeance to cut through three-foot ice and start the patient "bobbing" for a fish. As the point of the axe penetrated the bottom of the ice, water gushed up to fill the hole. This was a race with time and axes continued to swing, cutting out a clear hole for the coveted, unwary fish. Water and ice don't stop fishermen of the north, and as the last strokes were driven home water splashed high in the air but was unheeded except for the cheers of the prompting crowd.

WOMEN often complete the party of man and dog which faces the northern wilds. Their abilities on snowshoes, with dog teams, even with hammers, were demonstrated. In the latter event the signal from the starter brought forth a ringing of hammers like that of a community building bee. By elimination, the winner was finally chosen. With three mighty blows she drove home the 2½-inch spike. Champion on the snowshoes was a young Indian woman who, with long, graceful strides edged out her competitors in the final dash.

Boiled sucker is not too appetizing but in the friendly spirit of the fish-eating competition, big handfuls of it were stuffed into mouths which in turn discharged the bones in a not-too-dainty manner. The winner, by a fin, had nearly cleared off his serving when the time gong sounded. Everyone reeled in laughter, even the good-natured contestants. Jigging and fiddling were equally as popular. The light-footed Cree picks up the tempo of the vigorous musicians and dodges, sidesteps and turns in matchless rhythm. Tall tales of the north are old tradition. Never are they



The muskrat skinning contest.

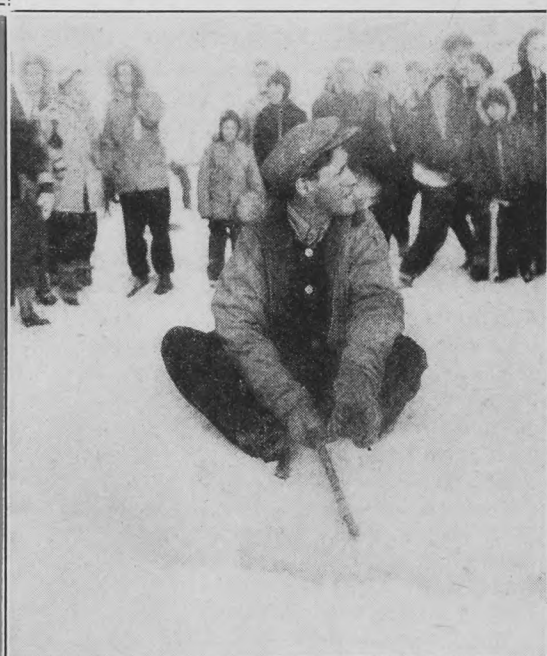
Fur Festival

There is nothing conventional about a Trappers' Festival

by R. G. MARTIN



The ladies' nail driving contest.



Contestants fishing through the ice.

Ottawa, a spectator from Illinois, a musher from Minnesota and trappers from the whole broad north. Accommodations of the town were overtaxed but adequate. Everyone entered into the carnival spirit.

Festivities opened formally with a grand parade through the town. Boys and girls with their one, two and three-dog hitches led off the show. Behind followed trappers, some in decorative Indian costume, some in comic dress. All provided escort for the royal court of princesses representing the communities of the north. These were the pride of their districts: Miss Sherridon, Miss Churchill, Miss Flin Flon, Miss The Pas and Miss Kewatinook Oche ("Princess from the North")—the 22-year-old Indian "Princess" who was sponsored by her people

Placids of the world. Rat skinning led them off. You run out on snowshoes—recognized foot gear in the north—remove a muskrat from its trap, skin and scrape the pelt and return with the stretched product to the judges. Prizes were substantial but of secondary importance to the trappers for the last man to return with his pelt tried just as hard as the winner. You don't see tea-makers at all winter games either. Building fires in the snow is second nature to woodsmen. In the race they blew on the flames, they fanned with their mitts, they even removed parkas to use them in fanning. The object was to melt snow, boil it and take some well-brewed tea to the appreciative judges.

The fishing contest was unique. A dozen men ran down the river with axes. With coats flung aside and hats pushed back they swung with a

told with greater flurry than at the Trappers' Festival liar's contest; the qualifications seemed to be length as well as height. This is part of the evening pastime when old friends of the north provide their own entertainment and spar in jest.

The Northern Manitoba Trappers' Festival is to the great pioneer northland like a Provincial Fair is to the plains of the prairies. The festive spirit is created by competition in showing produce as well as in games and in races. Maybe it is a few degrees colder than the wheat belt—particularly when the wheat belt fair season is on—but the brisk temperatures are invigorating. The fever surrounding the main dog race is like that which you feel in the last inning of the final game of a two-day ball tournament.

(Continued on page 73)

THE business of manufacturing wheat into flour and flour into bread and other bakery products is a huge one in any industrial nation. In Canada, with a population of around 13 millions, we eat 45 to 50 million bushels of wheat. In 1947, for example, there were approximately 170 flour mills in operation, with a total production worth \$266.5 million, of which, of course, a very substantial amount was exported. In addition there are 2,900 bakery establishments in Canada employing 31,500 people who make products to the value of \$165.7 million.

Since the war we have been eating more bread than ever. Not only has an increase in population caused the total bread consumption in Canada to go up from 999 million pounds in 1939 to 1,385 million pounds in 1947, but the consumption of bread per person has increased from 88.3 pounds to 110.1 pounds. One of the reasons for this increase, undoubtedly, is the great variety of breads now being offered to the public as a result of the ingenuity and skill of the baking industry, and the refinements in the milling of flour which are constantly occurring.

UNTIL about 1870, all flour was made by the straight grinding of wheat. Then, a process of rolling the wheat was developed in Hungary; and when the great hard wheat areas of the United States and Canada developed later, it became necessary to adopt the roller process in North America. Britain, a great wheat importing country, was forced to follow suit, when the hard wheat from the northern plains of North America began reaching her mills. Since that time the process has undergone considerable refinement, until today consumers have

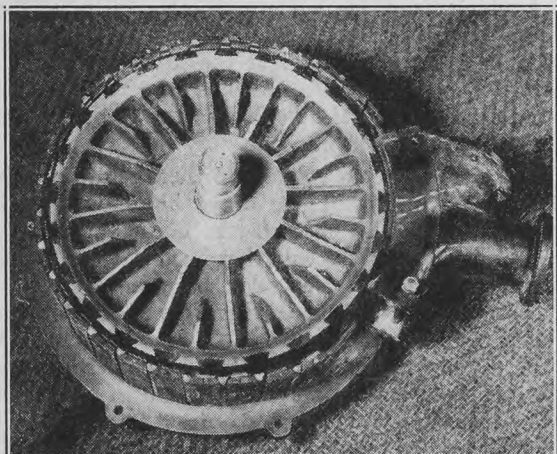


A research worker at Washington State College filling the hopper.

provers" to replace the natural aging of flour, but are still a matter of some controversy.

In the flour milling process not more than about three-quarters of the wheat kernel is ordinarily extracted as white flour. During wartime in Britain, for example, when there was great need for securing the maximum amount of human food from imported wheat the "extraction rate" was raised from 75 per cent to as high as 85 per cent. Indeed in some countries it went up to as much as 90 per cent. This, however, was a matter of dire necessity and such bread is by no means white, or popular with consumers who favor white bread.

ON the occasion of a visit to Washington State College at Pullman, Washington, I learned of a development in flour milling which interested me because of the simplicity of the milling process and the fact that it produced an extremely fine, whole wheat flour, which made nutritious bread of good loaf volume. This whole wheat flour has been named Unifine and was under test experimentally by Miss Mary M. Corbett, a graduate of the University of Alberta in 1944, who was working as a graduate assistant in the College of Home Economics on the development of this flour. The project was a co-operative one between the Division of Industrial Research, the College of Home Economics, The Agricultural Experiment Station and the State College Food Service. I also had a very satisfactory interview with Dr. Barbara A. McLaren, assistant professor of Home Economics, whose home was also in Alberta, who was kind enough to make available to me a copy of Miss Corbett's thesis on Unifine flour completed this year in partial fulfillment of the require-



Rotor, inlet-outlet casting, and stator blades, in position with one end-bell.

UNIFINE

a new

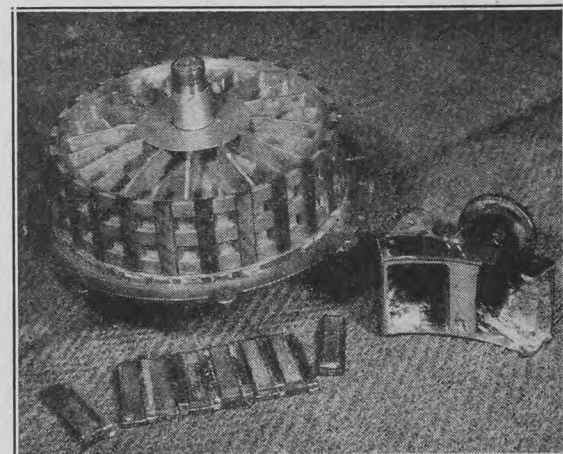
WHOLE WHEAT FLOUR

Washington State College develops a highly nutritious new bread from new finely-ground whole wheat flour

by D. W. NASH

standard breads made from flour which incorporated some of the natural qualities of the wheat, especially the vitamins of the B complex. These standards called for a bread not quite as white as standard white bread, but nevertheless of improved nutritional quality. On the other hand, in the United States improvement in white bread has been by way of artificial "enrichment" or "fortification" of the bread by the addition of synthetic vitamins and other elements. Today, probably more than half of the commercial bread made in the United States is so treated.

The flour milling process now is a highly complicated one. It involves not only the cleaning of the wheat, but also its tempering or conditioning. This requires a very finely-adjusted combination of moisture, temperature and aging. Chemicals are being used increasingly as bread and flour "im-



Rotor in place on one end-bell with inlet-outlet casting and individual stator blades.

been educated to expect what is, for all practical purposes, a pure white bread, very fine in texture and with practically all of the darker but highly nutritious branny layers removed, as well as the germ.

Health authorities have complained for many years about the sacrifice of nutritive qualities to loaf volume and mere appearance. Because of this sacrifice of food quality for appearance, and also because of the newer knowledge of nutrition which has developed over the last thirty years since vitamins have been added to our health vocabulary, a keen controversy has developed at times. This has led us to what may be called a three-way progress toward bread improvement. One of these is by way of the brown, or whole wheat breads, which are consumed by perhaps one out of twenty persons. These brown breads are made from flour containing a portion or all of the outer, branny layers of the wheat kernel. In Canada some years ago a considerable amount of work was done which led to the incorporation into our food regulations of certain

ments for her Master's Degree in Home Economics.

The origin of Unifine flour is of more than passing interest. It appears that John Wright, an English businessman, operated a feed business in which he used a fairly simple grinder. The mill was, however, destroyed during the war as a result of bombing raids and was never rebuilt. Mr. Wright was unable to purchase a replacement mill in England and he came to the United States, where he was directed to Washington State College for assistance. There he explained what he was trying to do, and, ultimately, the Division of Industrial Research, seeing an idea that might eventually prove useful to the wheat industry of the northwestern states, undertook to build an experimental mill. The design finally adopted was an improvement over the original mill used in England, but followed the same principle.

The small experimental mill finally set up was really for experimental and research purposes. Its simplicity is illustrated by the pictures herewith. These show that it consists (Turn to page 34)

by PAUL ANNIXTER

The Odyssey of OLD SPECS

The young raccoon crouched deep in the hollow of an ancient oak.

The story of a young raccoon, who roused from his winter sleep, went wandering in the Tamarack Swamp to match his wits against men and dogs

Up the mysterious dim tunnel overhead he clambered to the opening of the hollow tree where he crouched for a space, surveying the immemorial silence and loneliness of the swamp woods. The daylight struck him like a blow. The sunlight and the reflected glare from the snow blinded him after months in the dark.

Like all his kind, and his kind are all bandits after their fashion, he was masked with a band of black circling each bright, canny eye and running back to the ears. But the young coon's mask was a good shade blacker than usual, with a distinct bar crossing the nose like a pair of huge spectacles, setting off the silvery fur above and below it with a most emphatic glint. It was this that later gave him his name in the region.

It was too early to be abroad; not a living thing stirred in all the silent reaches of the tamaracks. As he crouched there on his high perch the loneliness assailed him strangely. The whole snow-patched vista became suddenly distasteful to him. All the long two years of his life Young Specs had lived in this remote and silent sanctuary of Big Tamarack Swamp, and liked it. But now he felt suddenly and strangely alone, and disgruntled about it. Something was the matter, something was lacking here, and he knew all at once that life as he had lived it alone was intolerable, and not all the company of the frogs in the ponds or the squirrels in the neighboring trees, or the sly foxes or prowling lynx, would ever suffice for him again.

What was the matter with him? It was quite simple. He had gone to sleep a little over four months before as a mere stripling, and had slept himself, so to speak, into man's estate. Like a good many of us who are not coons, that transformation was not a little disquieting. He had grown more than an inch over-all while he slept. Even his feet had grown and he had taken on girth; his delicate cat-like whiskers were longer and more luxuriant, and his chief pride; his black-and-white ringed tail had become a very plume of vanity. He had even achieved something in the way of long pants, the thick fur on his short legs having developed into heavy chaps that reached almost to his black feet. Result: he was in love, in love with a raccooness he had never even seen.

IT was a strange and wonderful sensation. It made him feel in spite of his loneliness, that the world was his oyster, though the way to open the thing was a mystery. Natural knowledge, however, told him what to do about it. He backed slowly down the tree and began to ramble, led by the promptings of that evanescent sixth sense which flickers on in the wisest of us when the other five are at fault.

The spell of the wintry woods lay heavy over all things, the stillness and the loneliness increased, not broken, by the hundred and one crepitant little sounds of the thaw. Too early by a matter of weeks to be out, and Young Specs was most unhappy, lean and cold, and brittle of fur. Not another coon had been stirring throughout the entire length of the swamp. There were squirrels and rabbits, however, and a great horned owl from the north who all winter had been the sword that hung low over all the smaller swamp dwellers. These had come to know him well; knew him to be silent as a cloud-shadow and three speeds faster and deadlier than even Swagdagger, the mink. The young coon knew him not at all until the horned one out of arrogance buckled through with day-dimmed sight, made a stoop for him. He whirled hissing and sparring just as the owl saw his mistake and banked, leaving a bunch of breast feathers in the coon's black clutching hand. He left also another bit of knowledge for Young Specs; even his voice had changed. He had loosed a growl at the attacker that had startled even himself, a growl as grim as that of the Littlest Bear, the Middle-Sized Bear and the Great Big Bear all rolled into one.

That set him up even more than before and he wandered until darkness drove him home again. He was naturally nocturnal in his habits, but he was not built for the cold that lived in those woods on March nights. Next day he went wandering again, and the next, and a thankless business it was, in a birdless, frogless world. It was not until the fourth day that he encountered another coon, a grizzled old bandit, abroad early out of sheer cantankerousness. Young Specs hurried forward eagerly. He wanted to join up with the old fellow at once, but the other had different ideas. He warned the youngster off with a snarl and a long, hard look and moved stolidly away into the thickets. Young Specs felt his youth terribly. So much to learn and nobody to tell him.

(Continued on page 77)

ONE March afternoon when the forest lay still, wrapped in snow and silence, and the winter sleepers had not yet ventured abroad, a young raccoon stirred and opened his eyes deep in the hollow of an ancient oak. Yellow sunlight sifted into the tree opening six feet above him, and a warm south wind puffed lazily in, carrying with it a rousing scent. Human nostrils would have been too dull to catch it. It was the smell of melting snow and it was this that had awakened him, together with the infinitesimal sound of trickling water—the very orchestra of spring.

He roused instantly as all wild things do, and stretched in a businesslike manner, shoving aside several shiny mussel-shells, some tin foil and a broken china cup that had nestled in the curve of his furry body as he slept. Not so long since he had exultantly carried these bright treasures home and played with them by the hour, rolling them back and forth and up and down, in the dim recesses of his den. Now, queerly enough, they had no slightest lure for him, nor was this due to fickleness or hunger. It was simply that he had awakened to find himself strangely metamorphosed.



CLOUDS OVER THE Daisy Field

LEIGH, my husband, was at the barn. I could hear the turkeys beating their wings as he loaded them into the truck. I heard Junior's childish treble.

"Daddy, take the little turkeys. Don't take General Merrill! Please, Daddy!"

The letter I had just taken out of the mail box was from my sister, Betty. All out of breath I ran toward the house. But I stopped. It was a gaunt, haggard old plantation house. It needed paint, a new roof, underpinning, and in the thin November sunlight, it seemed wan and ruined. The perfumed blue envelope in my hand, the costly velour of it, was like a slap in the face. Betty had married recently. Betty had always demanded the best; probably she was surprised she had done as well as she had in wedding Jonathan Sedgewick.

I went into the big, hollow living room. The big fire of backlogs did not make it cheerful. I tore open Betty's letter.

"Jonathan and I are driving through to Miami, darling. Thanksgiving. We should come by your house in the afternoon. Wouldn't it be nice if we could have Thanksgiving dinner together?"

Five-year-old Junior burst in. He shook me; he was almost in tears. "Please, Mamma, make Daddy leave my big General Merrill turkey and take the little turkeys to market!"

"Yes, dear," I said breathlessly. I jumped up and ran to the back porch and called, "Daddy, don't take the big turkey!"

Leigh stood there, broad-shouldered, puzzled, and demanded, "Hey—but you said—"

"Come by the house before you go to town."

"W-well-okay—"

Junior ran back and joined him to make sure and I returned to the fire. "Ah, Jude, Jude!" Betty wrote. "It's been so long. So very long. But of all the old years you and I lived I seem to remember only one time. Do you remember it as vividly as I? We were at play. Over in the daisy field. I'd run ahead of you and up the high hill where the clouds and the purple sky were, and the daisies shook in the wind—remember? You cried to me to stop. It was forbidden ground because of the high steep cliff on the far side. You called to me, 'You can't go there. Come back!' But I told you I was going to reach the clouds, dip them out of the sky with my two hands, and eat them like whipped cream. I was going to spoon the sky and taste the peppermint flavor."

How I remembered!

Now she was married to a millionaire—she wrote. She was not bragging. Not exaggerating. Betty never did those things. He was a marvelous man. I'd see when they came. She wanted to see my old Southern plantation home. She wanted to see Leigh. Tell Leigh she was not as selfish and mean as he thought.

"Jonathan Sedgewick manufactures cotton gins in Birmingham," she went on. "He, too, wants to see your plantation. Jonathan is very much interested in such projects as Leigh's rehabilitation of his ancestral acres."

Her vivid, artistic scrawl went away into the blue reaches of her fine paper.

I used to love Betty so, hate her so. But I still think she was the most beautiful thing I ever knew. Her hair, all wild and free, put me in mind of milkweed fleece in cream sunlight. Her eyes made you think of a blue sky mirrored in sleepy water.

And nothing in all my life did I remember better than the day when she ran ahead of me, against father's and mother's

orders, up the daisy slope and on beyond the hill, reaching for the clouds, reaching for the sky. I stood stock-still in my tracks and readied my soul for the tragic job of carrying her lifeless form from the bottom of the crags to my weeping parents.

Then I got to the top of the hill. Betty wasn't dead. She was just sitting in a mass of crushed daisies and she was weeping. I went to her. I remember just how I said it, just how I felt, as sure as if I had lived and died and knew all things.

"You can never reach the clouds, nor eat the sky like peppermint cream."

She let me dry her eyes, let me lead her by the hand back down through the white daisies.

ODD that I should recollect this rather than the years of orderly living my sister and I did together. When we children were small, my father was terribly poor. Later he was to know better days. I'd got through high school and had begun teaching. It was Betty who went to college. I remember the regular checks I sent to her. That is, until Leigh Merrill and I met and we fell in love.

Leigh and I learned what it is like to entertain a millionaire on a farm when Betty and her husband came to visit us—Betty, who as a child, believed that she could reach up to the clouds and pour them from the sky

Leigh and I were married. We came here to live. The old place was gone to rack and ruin. Croppers had lived here and chopped half the place for kindling. Leigh didn't have any money; I bought a little furniture. But what did any of that matter? We were so much in love. We worked side by side. I counted it as one of life's privileges. Junior was born out of exquisite love. Some day we would have the old place restored. But there were the doctor's and hospital bills. A bad crop year. This and that. Still, I never gave any thought to that. In the end we would know the grand life, in a way at least, the Merrills had lived in the old romantic years.

My meditation was broken by Leigh's coming in. Betty's letter had wafted to the floor. I took it up and gave it to him. "Read," I said. So he read and said, "Ah." Just that, nothing more and meaning almost anything at all. Leigh had never cared much for Betty.

"We'll have to slaughter General Merrill," I said. "Don't let the baby know. I'd planned just a little cozy dinner day after tomorrow for the three of us. Now it must be elaborate, the finest we can have. Swap the turks for the things I send you for. Betty and her millionaire husband! I—good grief, Leigh," I cried despairingly, "what do millionaires eat?"

Leigh said, "They don't eat. They die of dyspepsia."

After my husband and small son were on their way I stood in the door of the big barren living room. There were strange areas of lighter color on the old polished wood walls. The family portraits used to hang there. General Merrill, after whom Junior's turkey was named, occupied the honored position above the great mantle. Grandmother Merrill's picture had been hung at the north end of the room. Leigh's mother's and father's portraits, in a smaller world, a poorer world, had hung at the dining-room end. His mother's picture now was over the mantle. In the division (Turn to page 102)



by HARRY HARRISON KROLL

Illustrated by Robert Reck.

"I'll serve. I'll put on an act that will knock this millionaire smack between the eyes."

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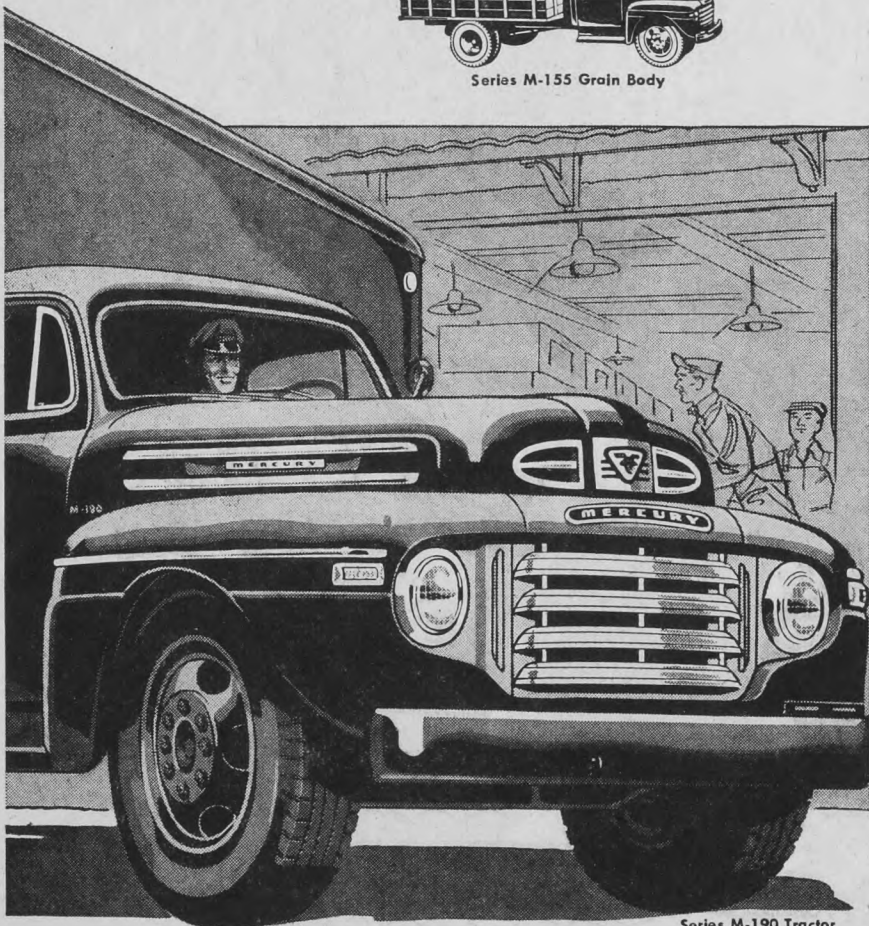
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Crushing The Apple Surplus

The growing breakfast juice habit presents B.C. growers with an opportunity to develop an alternative outlet for their product

by CHAS. L. SHAW

B RITISH COLUMBIA apple growers, with a limited overseas market for their crop, may have found at least a partial answer to their problem in the large-scale development of the apple juice industry in the Okanagan Valley.

It would appear as though the juice makers have won the initial rounds in their battle for acceptance of their product on the more profitable markets of this continent, and there is nothing but optimism among them as to the future course of their business.

British Columbia's pack of apple juice last year was a record-breaker and it seems likely that another mark will be shattered during the coming season, if the crop is a bountiful one.

Distilleries have been "discovered" as a ready customer for apple juice, and six tank cars of concentrate were recently shipped to an eastern distillery. It is not too much to expect that apple juice production will soon enter the realm of "big business" and play an important part in stabilizing the economy of the orchard country.

British Columbia juice experts are somewhat skeptical as to the possibilities of building up a big trade in apple cider, and their uncertainty is based on recent experiences of the provincial liquor board. The British Columbia board imported cider from the United Kingdom, but it met with indifferent demand and no second orders were placed. It even had difficulty in disposing of some shipments of Ontario sparkling cider.

The potentiality of the beverage market is such as to stir the imagination of some of the apple processors, however. They point out that Canada annually consumes 180,000,000,000 gallons of beer annually. If cider could break into that market only on a fractional basis, the returns would be tremendous. One estimate of the market potential based on a small percentage of the beer consumption, placed before the fruit growers recently, was 9,000,000 gallons. That would require 4,500,000 boxes of apples, or more than half the total average crop in British Columbia's most productive area.

Until it has been demonstrated, however, that there is a real demand for cider of a kind that can be produced in British Columbia, the processing and selling effort in that direction will be held under check. One cheerful factor, in the view of those who would like to see the cider industry expand, is the absence of any consistent advertising or merchandising program. They feel that the cider market has not yet been adequately tested because there has been no real campaign to promote the product.

T HE apple juice trade is the thing that has already paid off handsomely and gives rich promise, and for that reason it is only natural that this phase of the industry will receive the most support for the present. The cider prospects are secondary, even though manufacturing may be undertaken on a small scale at one of the Okanagan plants during the coming season.

B.C. apple juice has won friends because it is a superior product, and

the technicians responsible believe that they have developed a process not likely to be substantially improved. A recent visitor to the Pacific coast was Dr. Hans Freund, of London, who told a meeting of fruit growers in the Okanagan that juice processors in this country had much to learn from Europe. He pointed out that in Switzerland the annual per capita consumption of apple juice was one gallon, whereas in Canada it was only one quart. Dr. Freund interpreted this to mean that the product available in Canada was inferior and that application of more modern technique would produce a more acceptable juice.

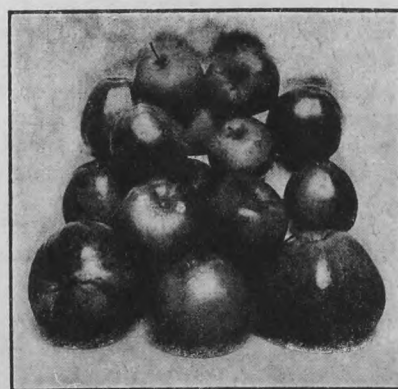
Under the British system, said Dr. Freund, the juice is extracted cold with a new, highly efficient press, and then stored in big containers in refrigerators under carbon dioxide. However, Dr. Freund's contention that methods in British Columbia are backward was vigorously disputed by Paul Walrod, manager of B.C. Fruit Processors, Ltd., the grower-owned plant at Kelowna.

Mr. Walrod recalled that a process similar to that described by Dr. Freund had been tried out at Selah, Washington, ten years ago, and that the product was not popular, resulting in the collapse of the business.

C ONTRARY to the claim of Dr. Freund that heat destroys the flavor of apple juice, Mr. Walrod declares that flash heating to a temperature of 190 degrees is necessary to preserve taste and dietetic values.

Mr. Walrod even disputes the comparison of per capita consumption, at least in some sections of Canada, because he reports that 150,000 cases of apple juice, each containing three and one-half gallons, were shipped into the Vancouver market last year and he believes that on that record Vancouver is probably the world's biggest per capita consumer. Vancouver, of course, is only one Canadian city, but vigorous merchandising and availability of the product should vastly extend consumption of apple juice throughout the country. According to Mr. Walrod, Vancouver has at least demonstrated that apple juice can be produced that suits the Canadian palate.

There may be another important channel for the marketing of apple juice in the frozen form. Production of frozen orange juice has been one of the most sensational developments in the beverage field in the United States since the war, and reports from the South indicate that apple as well



as other fruit juice has been successfully experimented with along with orange. This is something the orchard people should investigate, but meantime they apparently have in canned apple juice a product that will add considerably to their revenue and at the same time reduce surplus and wastage in the industry.

Recent developments in the realm of price support have been a succession of bad news to poultrymen, and the University of British Columbia is working on a new survey to determine whether it's possible to operate an egg farm on a reasonably profitable basis under present conditions. The university is using facts and figures from 150 different poultry farms as the basis of its findings, which will be read with interest.

At present price of eggs and feed, the operator must be highly efficient and pretty modest as to the worth of his own time and labor in order to show a nice margin on his books.

FOR the first time, British Columbia fruit growers plan to enter the hail insurance business on their own account this year rather than place their policies with private companies. It will be a mutual and voluntary setup and the organization will be known as B.C. Fruit Growers Insurance Co.

Decision to enter the realm of insurance resulted from a comprehensive study of the subject carried out during the past year by a committee of growers. But there was lively opposition to the plan when it was introduced at the Penticton convention of the growers. Some of the hostility to the proposal was from districts that had never suffered hail losses. However, it was pointed out that, like lightning, no one can predict where hail will strike and that one district which boasted of never having had a hailstorm was a heavy loser in the three following years.

Of course, the final verdict must come from the legislature as to whether the growers will have the right to carry their own insurance; but meantime a bill is being prepared for introduction during the present session.

It may be akin to looking a gift horse in the mouth to speculate on the cost of a gift, but British Columbia orchardists estimate that their present of a million boxes of apples to the United Kingdom cost about \$2,000,000. However, this is a rather intangible figure as it doesn't mean that the growers actually dipped into their pockets for that amount. They merely figured out the potential cash market in relation to the crop and allotted what they thought would be a reasonable surplus for shipping gratis to Britain. Probably some of the apples so shipped could have been profitably utilized otherwise, but it was decided that regardless of this consideration the gift to Britain would be a happy gesture, much appreciated in one of the favorite traditional markets.

However, the growers believe that it costs nowadays about two dollars to produce a box of apples, pack it and store it for shipment. Ten or fifteen years ago the cost would have been about half that, and the difference lies almost entirely in the labor bill. Eighty cents an hour is the average pay for orchard country labor now, compared with about 30 cents during the mid-thirties.

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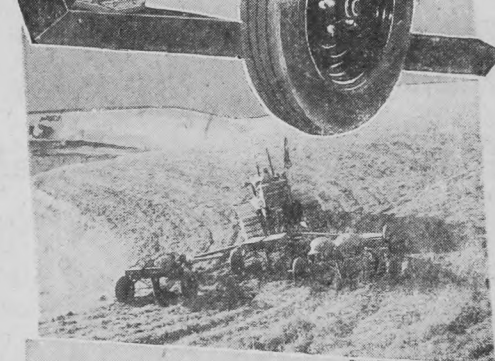
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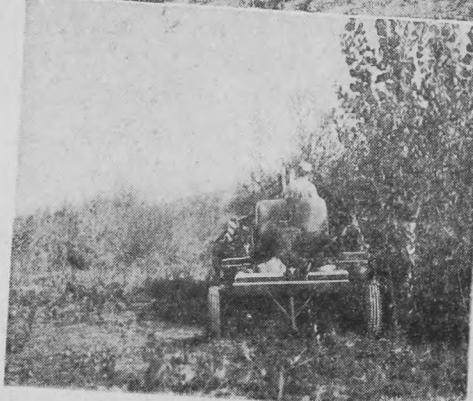
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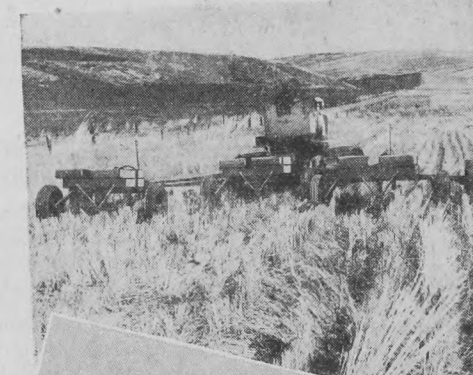
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News of Agriculture



Estimates place the displacement of butter by margarine in 1949, at 3.6 million pounds per month in Canada.

Strachey Defends Agreement

DURING the recent British General election, Food Minister John Strachey was reported as defending the Canadian-U.K. Wheat Agreement as representing fair, rather than exorbitant prices, and saying that he was proud of the long-term wheat deal with the Canadian Government.

"In the first two years," he is reported as saying, "we paid \$1.55, in the last two, \$2. The open market price all that time was more than \$2; most of the time \$2.50, and some of the time more than \$3."

Hormone Increases Milk

THE pituitary gland, located at the base of the brain, produces so many important hormones that it is sometimes called the "master gland." It produces the hormone known to control growth, too little secretion leading to dwarfism, and too much to gigantism. Another hormone produced in this gland starts and maintains the flow of milk following pregnancy.

A group of British scientists have recently published the results of experiments that indicate that the growth hormone as well as the lactation hormone influence milk production. The scientists gave each of 12 cows a dose of about a thousandth of an ounce of purified growth hormone. During the two days following the injections the cows averaged better than six per cent more milk than they had produced on the two days preceding the injections. This was more significant in view of the fact that production of all the cows was falling off. Injections of other hormones produced by the pituitary gland—including the lactation hormone—failed to have the same stimulating effect.

This discovery is of very great interest to research workers. Its practical significance to the dairy industry is still impossible to evaluate.

U.S. Margarine Trouble

FOR 65 years the United States has had a federal tax on colored margarine. Now this official preference in favor of butter is under attack and an Administration Bill intended to repeal the colored oleo tax, first imposed in 1885, was placed before Congress. It has been bitterly fought by the dairy interests and just as vigorously supported by the areas where the soybean and cotton are

important crops, and also by those less interested in either farm products. A Washington correspondent of the Christian Science Monitor commenting on a 48 to 37 Senate vote against a dairy state substitute for the Administration Bill reported:

"Millions of reproachful cows whose life work, according to their defenders, is now threatened, moored unhappily as the Senate voted to put the soybean by-product on a par with genuine butterfat."

"At the same time the Senate action indicates growth of the political power of the cotton and soybean states, in relation to the grazing and dairy states."

Meanwhile in Canada, the appeal against the decision in 1948 of the Supreme Court of Canada, which is being made by the Canadian Federation of Agriculture, is likely to be heard by the Privy Council in April and is being supported by the Dominion Government. In the interim, the 1949 production of margarine in Canada amounted to 73.9 million pounds, slightly more than this amount being sold during the year, notwithstanding that both Quebec and Prince Edward Island have banned the sale of margarine outright.

The legal argument before the Privy Council will be whether the Dominion or the Provinces have jurisdiction in the manufacture and sale of this product.

Wheat Sales

ACCORDING to the report of the Canadian Wheat Board for the crop year 1948 to 1949 the Board marketed 293,000,000 bushels of wheat during that crop year ending July 31. Of a total of 1,115,397,588 bushels handled during the first four years of the five-year pool, only 46,803,308 bushels remained unsold. During the four-year period the Board paid to producers \$1,907,177,178.98.

During the crop year 1949-50, sales of Canadian wheat are being made by the Wheat Board under the International Wheat Agreement, for the first time. This Agreement will have three more years to run after the close of the crop year.

Of the 456 million bushels committed under the Agreement by the five exporting countries, Australia, Canada, France, U.S. and Uruguay, a fraction more than half has been sold to importing countries supporting the Agreement, up to February 18.

Up to February 14, Canada had sold under the Agreement 150,719,855 bushels, of which 120,219,667 bushels were sold to the United Kingdom. This amount includes only that portion of the 140,000,000 bushels committed to the United Kingdom under the Canadian-U.K. Wheat Agreement which had been delivered, which means that Canada had actually sold or had contracts for the total of approximately 175,000,000 bushels by mid-February (less the quantity postponed on account of bacon, fish and soft woods), out of the total quantity of 203,069,635 bushels which is Canada's share of the total International Wheat Agreement quantity.

Recently, two U.S. exporters attempted to break the International Wheat Agreement minimum price of \$1.63 at U.S. gulf ports, by offering wheat to Holland for May delivery at \$1.62½. The U.S. Department of Agriculture immediately readjusted its subsidy policy so as to appear to put the U.S. government on record as holding to the maximum prices sales under the I.W.A.

Up to that time, according to the Northwestern Miller, there had been "a strong disposition on the part of officials close to the I.W.A. to urge that the exporting nations drop their sales price to the floor, to move wheat to the importing nations."

What may happen with respect to U.S. wheat prices under the I.W.A. in 1950-51, will depend on the attitude of Congress toward the use of Marshall Plan funds for the purchase of Canadian wheat. With approximately 500,000,000 bushels of carry-over into the 1950-51 crop year, the United States could, if Congress insists, reduce her heavy surplus at prices which might mean substantial reductions to the Canadian wheat producer and a much more strenuous effect on the part of the Canadian Wheat Board to get rid of its holdings from the 1950 crop.

Scientists To Bring Advances

NEXT to the H-bomb, which might destroy civilization, the greatest human problem of today is how to feed the world's increasing population. . . . There is only a narrow gap between supply and demand and it will take all the scientific knowledge we have to bridge it." This statement is reported as having been made by Dr. Blythe Eagles, Dean of Agriculture at the University of British Columbia, Vancouver. Dr. Eagles was urging the advantages of a scientific training for farmers and for the great needs of agricultural research. "The next great step in the improvement of dairy cattle may come from some scientist who has never even seen a cow," he said, adding that "it will be from those who are properly trained in experimental outlook that the larger advances in agriculture may be expected."

Forage Seed Distribution

DURING 1949, the Saskatchewan Department of Agriculture sold and distributed 226,562 pounds of forage crop seed, or according to an announcement made by the Honorable I. C. Nollet, Minister of Agriculture, enough to seed over 27,000 acres.

About 75,000 pounds of this was sold by the Field Crops Branch of the Department during the fall months, under a special policy for south-

western Saskatchewan, whereby the seed was supplied at half the cost price, with transportation charges prepaid and bags included free. The balance of the amount, approximately 150,000 pounds, was sold at approximately cost price, with transportation charges prepaid and bags and inoculum supplied by the Department. The Saskatchewan forage crops program is intended to popularize the use of alfalfa seeded as a mixture with grasses, as well as to increase the acreage of forage crops as a means of developing reserves of livestock feed. This would place the livestock industry of Saskatchewan on a sounder basis.

Hogs On The Increase

THE number of hogs on farms in Canada was estimated by the Dominion Bureau of Statistics at 5,412,900 as of December 1, 1949. This is an increase of 18 per cent over the estimated number of 4,604,200 at December 1, 1948. Increases occurred in all provinces, being about 20 per cent in western Canada as compared with 16.2 per cent in eastern Canada.

The fall pig crop (pigs saved June to November) was 19 per cent larger than the 1948 crop. The 1949 crop amounted to 4,199,100 pigs. The estimate of sows to farrow in the spring period of 1950 indicated a spring crop about 13 per cent larger than that of 1949. The estimate is that 606,700 sows will farrow this spring as against 538,180 in the spring of 1949. The increase is expected to be 15 per cent in western Canada against a 12 per cent increase in eastern Canada.

All of these estimates are based on returns supplied by farmers who co-operated with the Dominion Bureau of Statistics.

Irrigation Development

WATER rights in the big St. Mary and Milk River Development in southern Alberta, will cost users \$10 per irrigable acre, payments to be spread, if desired, over a period of ten years, with a down payment of at least \$1 per irrigable acre. Users may, if they prefer, make annual crop payments instead of cash, and in such cases will pay one-fifth share of all grains and one-fifth share of hay and fodder crops.

It is expected, according to W. L. Foss, P.F.R.A. supervising engineer, that the large diversion tunnel at the St. Mary River dam will be closed sometime in August, after which the first water will be stored against the new dam.

The cost of the entire project which ten years ago was estimated at \$13,000,000, is now estimated by Mr. Foss to cost \$26,000,000 by the time it is completed. Full development of the project will utilize all the waters of the St. Mary, Milk, Waterton and Belly Rivers. This water will irrigate about 510,000 acres between Magrath and Medicine Hat.

An agreement has not yet been signed between the Dominion and the Province of Alberta as to the relative proportions of the cost of this large project, which will be borne by the two governments. A recent statement by the Hon. David Ure, Minister of Agriculture for Alberta, indicated that the Alberta Government is still waiting for acceptance of the agreement by the Federal Cabinet.

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DRY SKIN! Cute blonde Mrs. Sonia Dorsey has unusually dry skin. She says, "I've found Noxzema helps keep my skin soft and lovely. Now it's my regular all-purpose beauty cream."



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Get It At A Glance

Short items of interest to farmers

AN indication of the faulty loading of livestock on the way to market is the fact that in one recent year in Canada, a total of 699 cattle, 780 calves, 2,241 sheep and 3,942 swine were found dead on arrival at inspected packing plants.

THE 16 European Marshal Plan countries, through the Food and Agriculture Committee of the Organization for European Co-operation, have decided that it will be possible by 1952-53 to decrease imports of food and feeding stuffs by \$1,250,000,000. This would be accomplished by a saving of \$450,000,000 in imports of coarse grains and oilcakes, \$100,000,000 by diverting wheat and other bread grains from livestock feed to human food, \$100,000,000 for fats, \$300,000,000 for non-cereal foods and tobacco, \$150,000,000 as a result of increasing production of wheat in Marshall Plan countries and a further \$150,000,000 for livestock products.

THE latest figures available indicate that 91 diseases and unhealthful conditions in meat were responsible for the condemnation of 13,427 cattle carcasses, 14,212 calf carcasses, 4,474 sheep, 15,955 swine and 32,819 poultry. In addition to these condemned carcasses there were carcass portions of all classes combined, which totalled 3.4 million.

THE Canadian Wheat Board is urging delivery of wheat to country elevators as promptly as circumstances will permit, between now and the end of next July, in order that these new deliveries and present Board stocks might be disposed of prior to the 1950 harvest. This is a form of co-operation with the Board which the selling agency for Canadian wheat can reasonably expect to receive from prairie farmers.

INDIVIDUAL provinces in Canada vary considerably in the way price movements affected agriculture in 1949. The decline in Prince Edward Island was most serious, being 33.9 points from a 1948 index of 237.9. In British Columbia the index rose by three points, in Alberta by one point, in Ontario and Saskatchewan by one-tenth of a point, while in Manitoba it fell by 2.7 points, in Nova Scotia by 3.1, and in Quebec by 3.7.

DURING 1949, \$90,000,000 worth of livestock and dressed meat was shipped from Canada to the United States market, at a conservative valuation, based on 256,755 head of cattle at an average valuation of \$175 per head, 36,011 calves valued at \$62.50 per head, 28,565 sheep and lambs at \$17 per head and 90,408,821 pounds of dressed beef and veal estimated at \$29,609,249. In addition there were 3,670,629 pounds of mutton and lamb at 46 cents per pound, plus 64,964 head of purebred and grade (dairy) cattle valued at \$11,368,700.

MANITOBA is considering the establishment of an egg marketing board to operate in conjunction with the Agricultural Products Co-operative Marketing Act, passed by Parliament to assist in the marketing of farm products in inter-provincial and export trade.

DUE to the deep snow in January, which prevented many of the antelope in Southern Saskatchewan from foraging for themselves, an R.C.A.F. twin-engined Dakota aircraft from Winnipeg co-operating with the Game Branch of the Saskatchewan Natural Resources Department, dropped about four tons of baled hay in two areas during two flights, by which it is believed about one thousand antelope were helped through the winter.

THERE were 29,000 calves vaccinated against brucellosis (Bang's) in Alberta during 1929, against only 10,000 in 1948. Blood tests for brucellosis numbered 25,258 during the same year, as compared with 13,527 tests in 1948. Vaccination involved 2,200 farm visits and blood tests involved 3,500 farms in 67 municipalities.

DURING the last ten years, production in New Zealand for all cows in milk has averaged nearly 13½ pounds per cow more than for the preceding ten-year period. It is estimated that this increase is worth more than £2½ million annually to the New Zealand dairy industry.

THE Hon. David Ure, the Minister of Agriculture for Alberta, was reported recently to have stated that the Alberta Government has plans for an additional school of agriculture in southern Alberta. No decision has been reached as to when it will be built or where. In any case it will be held up until the new School of Agriculture at Fairview in the Peace River District is completed. This school will accommodate 100 pupils and may cost \$850,000. It may be ready for short courses this fall.

IN 1949, Canada imported 151 purebred Shorthorns from Britain, which remains the home of the world's outstanding purebred Shorthorn herds. At the recent sale in Argentina, imported Shorthorn bulls made some exceptionally high prices, the top being for Calrossie Rescue imported from Britain, which brought £7,650 (\$23,600 Canadian).

THE Canadian Seed Growers' Association stems from an idea conceived in 1899 by Dr. J. W. Robertson, then Commissioner of Agriculture and Dairying for the Federal Government. Today the CSGA has more than 4,000 members. Over the years since 1931 it has honored 77 of its members who have been designated Robertson Associates. Of these 77, there are 65 still living.

DURING 1949, increases in the prices of livestock, poultry and eggs, fruit, tobacco and maple products in Canada, were a little more than offset by a decline in the prices of grain, dairy products, potatoes, vegetables and furs. The index number of farm prices for agricultural products for the year stands at 251.3, as compared with 252.6 for the year 1948.

THE highest priced bull at the recent sale in Perth, Scotland of Aberdeen-Angus cattle, was sold to Argentina for 5,200 gs. (\$16,744). The average price of 398 head was £233 (\$716.47) compared with £208 last year.

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Guide Posts To Dairy Profits

How to increase net returns from dairy feeding

ALMOST all of the work and the ability of Canadian farmers, and all of the ramifications of the dairying industry, centre in and around the inherited capacity of the dairy cow to produce milk. At first such a statement appears so simple so as to be hardly worth recording, but, in fact, it is perhaps the most significant statement that could be made about dairy production. It was, indeed, this fact which served as the theme of a very excellent talk delivered to the recent annual convention of the Alberta Dairymen's Association, in Edmonton, which was given by Dr. A. O. Shaw, head of the Dairy Husbandry Department at Washington State College, Pullman, Washington.

To establish his theme that high-average, economical production of milk is the basis of success in dairying, Dr. Shaw made reference to seven Washington herds. The lowest herd averaged 204 pounds butterfat per cow and the highest 580 pounds. The lowest herd was fed only roughage; the highest, roughage plus \$113 worth of grain per cow. The second lowest, however, averaging 256 pounds butterfat per pound, was fed an average of \$101 worth of grain per cow, while the fourth herd, averaging 300 pounds butterfat per cow, received only \$35 worth of grain per cow in addition to roughage. In the case of the 256-pound herd the amount of grain fed was probably far too high to be profitable, while the 300-pound herd could probably have been fed more grain to show a substantially higher net return. Dr. Shaw based his conclusion on the assumption that cows fed roughage alone will produce 74 per cent as much milk as cows fed roughage and grain, when the grain is fed at the rate of one pound of grain to three pounds of milk produced.

Dr. Shaw declared that "the economy of high production per cow is one of the most important principles of milk production... because the feed needed for maintenance is related to live weight and is not affected by the amount of milk produced." This means that as production per cow is increased, the value of the produce increases much more rapidly than does total feed costs. This fact was illustrated by some figures which indicated that as average butterfat production

per year increases by 50 pounds, from a starting point of 150 pounds per year, total feed costs increase \$20 for each 50 pounds of butterfat increase, while the value of the product over the feed costs increases by \$75. These figures are, of course, relative to existing feed costs and the butterfat prices at any particular time or place. Dr. Shaw's figures indicated that whereas 150 pounds butterfat per cow, costing costs, a 550-pound butterfat cow cost \$100 for feed, returns \$50 over feed ing \$170 to feed would return \$350 over feed costs.

APPLYING this principle of economic production another way he indicated that "it is evident that a cow producing 550 pounds of butterfat annually will return more profit over and above feed costs when the butterfat she produces is sold for 75 cents per pound of fat, than will a 250-pound producer, even though her produce is sold for \$1.25 per pound of butterfat." The cost of housing and equipment would be much the same for both high and low-producing cows.

An eminent animal nutritionist at Michigan State College has recently stated that the chief nutritional deficiency of dairy cattle in the United States (and probably in Canada), is underfeeding, or a lack of total digestive nutrients (energy). Not only does ample feeding result in greater net income over feed costs, but the quality of feeding also increases the economy of milk production. For example, cows fed adequately on alfalfa hay and pasture produced 8,938 pounds of milk, but others fed in the same way, with one pound of barley added for each 65 pounds of milk produced, yielded 11,086 pounds of milk. Thus \$50 worth of barley produced more than 2,000 pounds of additional milk per cow, which was worth at least \$80.

Putting this result in another way Dr. Shaw said that of two farmers, each securing a \$2,000 net return over feed costs, farmer A with cows averaging 5,000 pounds of milk annually would need 20 cows to return him \$2,000 per year but farmer B, with cows averaging 10,000 pounds of milk, would secure the same income from only seven cows producing only 70,000 pounds annually instead of 100,000 pounds, the difference arising

from more economical production by farmer B.

NEXT to the economy of high production through quantity and quality of feed, comes economy in feeding cost. Dr. Shaw argued that the old rule that one should feed a pound of hay per hundred pounds of body weight, three pounds of silage per hundred pounds of body weight, and grain at the rate of one pound of grain per each three pounds of milk produced, is no longer sufficiently profitable. This would mean that a thousand-pound cow giving 40 pounds of four per cent milk would be fed 10 pounds of alfalfa hay, 30 pounds of grass silage and 13 pounds of grain. Such a ration would be better for the cow than for the owner, because it would give her the 20 pounds of digestible nutrients that she would need.

Actually the cow's ability to handle roughage means that it is more profitable to feed her all the good quality roughage she can eat. In regions of normal rainfall this usually means alfalfa hay and silage. The same cow could be fed 20 pounds of alfalfa hay and forty pounds of grass silage and still get her 20 pounds of digestible nutrients with only five pounds of grain instead of 13. On such excellent roughage she would not need any grain at all, if she were producing up to 27 pounds of milk, but under the old rule of one pound for each three pounds of milk she would receive nine pounds of grain daily, which would represent a considerably higher cost.

In the prairie provinces we do not feed much corn silage, nor do we grow nearly as much alfalfa as we could. Many dairy producers could probably purchase grain more cheaply than they can produce it; and on the other hand they could make much more money in the form of milk by greater attention to hay and pasture crops than by growing grain for feed. Dr. Shaw gave evidence during his remarks that he was speaking from experience. "Underfeeding," he said, "causes a serious economic loss because profit per cow is closely tied to production per cow. I took charge of a herd that was averaging less than 300 pounds of butterfat annually. No animals were sold or purchased. Yet by proper feeding and management the first year this herd averaged 464 pounds of butterfat, and the second year they averaged 534 pounds of butterfat. A great many cows in North America never produce up to inherited capacity because of lack of feed."

Alberta Livestock In 1949

THE livestock effort of the province of Alberta in 1949 showed some deterioration and decline from the previous year, according to a report prepared by J. L. Pawley, District Supervisor, Livestock Marketing, Dominion Department of Agriculture, Edmonton. The total value of cattle, calves, hogs and sheep sold on provincial and outside markets is calculated at \$135,021,514. Total cattle marketings were almost as high as in 1948, but hogs were down 240,736 head and sheep by 43,420 head. Market values per head were up in all cases, though hogs only averaged two cents per head more, at \$47.26.

Cattle quality was down somewhat, judged by the percentage of red and blue brand beef, though still sub-

stantially higher than the average for the country as a whole. In 1947, 14.42 per cent of Alberta slaughterings graded red brand and 22.21 per cent blue brand, which was a substantially better showing than the 10.13 per cent of red brand and 16.32 per cent of blue brand in 1949. About one-sixth of the cattle were sold outside the province, and 80,342 head of Alberta cattle were exported to the United States. Nearly 5,000 head were sold at auction at one of the large public stockyard markets. Mr. Pawley comments that, "the method of selling made for rapid selling, reduced buying and assembling costs, and the carload groups simplified accounting."

Higher prices per head of cattle have resulted in more carelessness in dehorning. At community auction sales throughout the province, only 10.4 per cent of the cattle were horned, but at Calgary this percentage rose to 15.6 and on the Edmonton market it was 19.9 per cent, while 13 per cent of the Alberta cattle sold in Winnipeg had horns.

Alberta hog marketings dropped last year to 924,717 head, from a peak of about two million head during wartime, and from 1,164,932 head in 1948. Alberta's record in hog carcass grading was substantially below the Canadian average last year, especially for the percentage of Grade A carcasses, which averaged 22.13 per cent of all Alberta hogs marketed, as compared with 31.09 per cent for Canada. The percentage of B1's was 57.23 per cent last year as compared with 53.19 per cent for the country as a whole. These 1949 figures were very similar to those of 1948.

Electric Cow Trainers

KEEPING dairy cows clean when in the stable has always been a problem for dairymen interested in the production of really clean milk. How to housebreak them has been the problem. The University of Wisconsin has made extensive tests of electric trainers, using electric fence equipment.

The electric trainer itself is an electric contact, in appearance much like a coat hanger, which is suspended just above the cow's shoulders and connected to an electric fence controller. In operation the cow gets a mild shock and backs up if she humps up when she is too forward in the stall.

The electric trainer permits the use of longer stalls, which are more desirable, owing to the fact that the cows are more comfortable, and fewer udder injuries and less mastitis results.

In the Wisconsin tests a herd of 17 cows was used and given two 28-day test periods, each one on a different sized platform from the other. Prior to each 28-day test period, the cows were vacuumed, brushed, their tails washed and the trainers adjusted for a week and then the 28-day test was started. During the test the cows were not brushed or cleaned in any way, except for washing udders just before milking. Records and observations were made twice daily, before barn cleaning in the morning and before evening milking. The weight of manure dropped on and off the stall platform was recorded, as well as the general cleanliness of the cow and her nervousness, comfort and adaptability to the trainers.

In the long, six-foot stalls, it was found that, with the trainer, cows

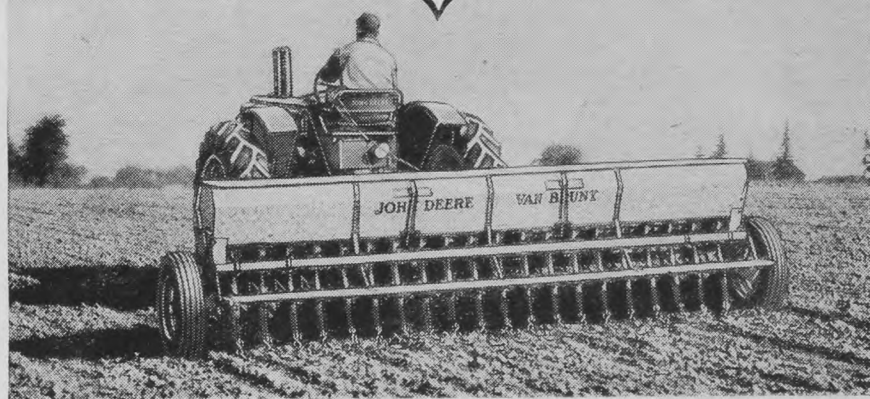
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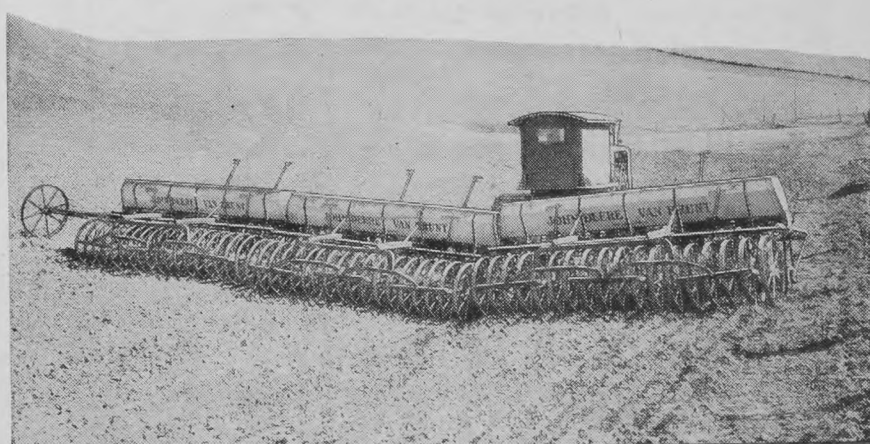
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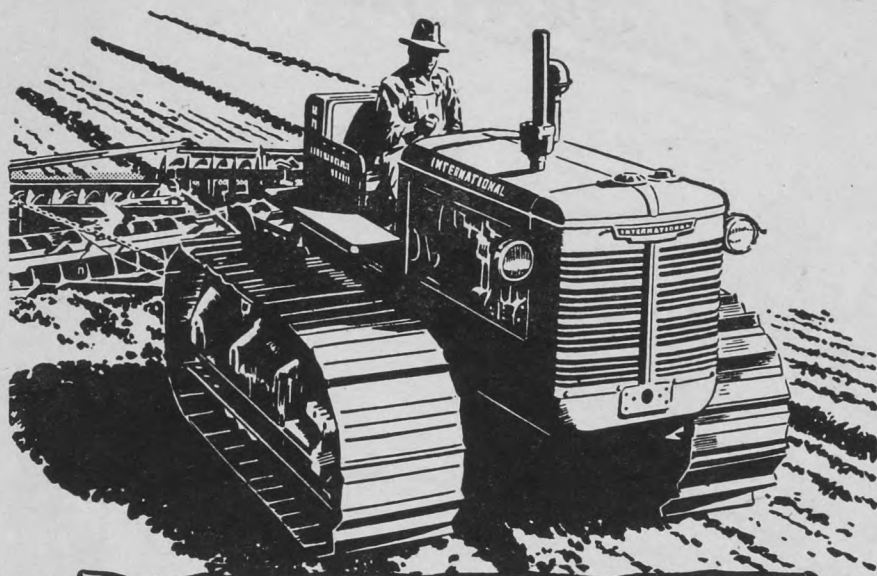
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dropped only one per cent of the manure on the platform. Where the stalls were only five and one-half feet long, three per cent was dropped on the platform. On the average however, the cows in the long stalls "were free from manure or stains about nine days out of ten; those in the short stalls, 19 days out of 20." Neither photographs nor observations revealed any difference in the cleanliness of the cows in the two different-sized stalls, though those in the long stalls seemed to lie farther from the gutter curve and to be more comfortable.

Acres Of Hogs

THE January letter of the Development Council of Canadian Meat Packers carries an interesting table with respect to the returns per acre from wheat, barley and oats, when fed to hogs. The calculations are based upon wheat yields of 25 bushels per acre, barley 40 bushels and oats 50 bushels. The table indicates per-acre returns when these grains are fed at varying rates, from 375 pounds to 400, 450 and 500 pounds of grain to produce 100 pounds of live hog. The calculations also include hog prices varying from \$16 to \$26 per hundred, dressed, or from \$12 to \$19.50 alive.

The calculations, of course, are purely mathematical and relative. No farmer will feed all barley, all oats or all wheat, even though the table may show that he can receive a return of \$100 per acre from a 40-bushel crop of barley if he could put on 100 pounds of gain with 375 pounds of barley and sell the hog for \$26 per hundred pounds dressed. It does, however, point up the fact that there is a substantial margin between the cash price obtained and the price realized for the grain when marketed through hogs.

The individual must, of course, determine whether or not this margin is sufficient to compensate him for the additional labor of feeding and the return on the capital and still show something extra for enterprise. If 450 pounds of grain per 100 pounds of live gain may be taken as approximately the average practice, then at \$26 per hundred pounds of dressed hog, a 40-bushel yield of barley produces a theoretical return at \$2.08 per bushel, or \$83 per acre. A 50-bushel crop of oats has a similar return of \$1.47 per bushel, or \$74 per acre, and a 25-bushel crop of wheat a corresponding return of \$2.60 per bushel, or \$65 per acre. Even at \$1.75 per bushel net on the farm for wheat, the acreage return from a 25-bushel crop would be \$42.50, which would indicate an additional \$22.50 per acre, as a possibility when even wheat is marketed through hogs.

Feeding The Dairy Sire

THE dairy sire in service can be maintained in good breeding condition with a pound of hay for each one hundred pounds of live weight, in addition to four or five pounds of grain feed daily. If silage or roots are available, which unfortunately is not the case in many parts of western Canada, four or five pounds of hay can be replaced with 12 or 15 pounds of root or silage, at the rate of three pounds of the latter for each pound of hay.

It is not wise to feed too heavily of roughages, because bulky feeds, in excess, induce paunchiness. Moreover,

where bulls are in service on a heavy breeding schedule, such as seasonal breeding, or when used in an artificial breeding centre, they will need somewhat more feed than that indicated above to keep them in good breeding condition and maintain their bodily weight. Bulls that are in too high fit tend to become sluggish; they are better kept a little on the thin side than too fat. If a bull has been run down, says V. S. Logan, Central Experimental Farm, Ottawa, it may be advisable to feed up to seven or eight pounds of grain daily until he comes back into condition.

Along with feeding, exercise is essential. A paddock or exercising yard will give what he needs, especially if it contains some bulky object which he can push about.

The Loss Of Calves

LAST year the Michigan State College made a study of calf losses in the five breeds of cattle kept at the college over a period of 16 years. The study covered the period from birth to ten months of age, primarily because until this age both the male and female calves are similarly handled. During the 16-year period a total of 14,067 calves were born.

The average percentage of calves born dead, including abortion, was 5.5 per cent, but the percentage by years varied from 1.8 per cent to 14.2 per cent. Although the figures include abortions, it is stated that all of the herd had been continuously accredited as brucellosis-free herds. In addition to the 5.5 per cent of the calves born dead, an additional 1.1 per cent died at birth. In seven of the 16 years none died at birth and for the remaining years the percentage varied from .9 per cent to 3.5 per cent.

The total percentage of dead calves to the end of the 10th month was 13.7 per cent, over half of which, or 7.1 per cent, survived birth but died before they were 11 months old. In only one year, 1948, did no calves die during this period. In 1935 and 1936, deaths were 14.4 and 10.8 per cent respectively, as the result of pneumonia which was serious in mid-summer as well as in winter in both years.

The average annual percentage of loss at the Michigan institution is reported to be in close agreement with those reported from Oregon and Iowa, but somewhat higher than the figures from Missouri and Cornell University.

A study of the ages at which the calves died after birth indicates that of 1,375 calves born alive, 104 died later. Of these—32, or practically one-third, died during the first week; 15, or about half as many, died from the second to the fourth week; 26 during the second month; 12 during the third month; six each in the fourth and sixth months; four in the fifth month and three during the seventh to the tenth months. Thus, 47 out of 104 calves died during the first month, 73 during the first two months, and 85 during the first three months, and 101 out of 104 before they were seven months old.

Studies such as this indicate the danger period and serve to emphasize the fact that pail-feeding, regarded as a necessity in many herds, is a departure from the natural method of calf feeding, which may impose a serious penalty on the owner unless extreme care is taken.

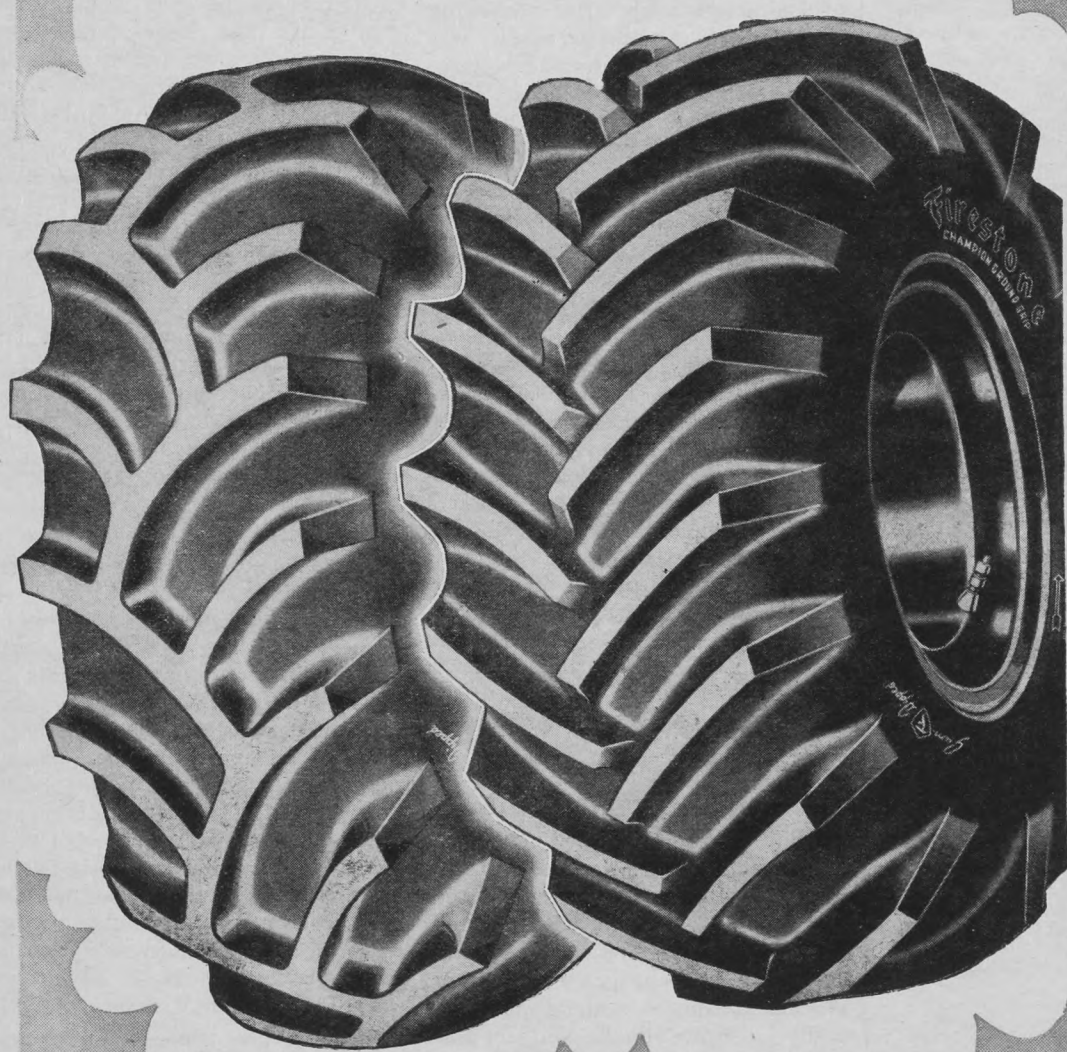
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FIELD



In Alberta and Manitoba sugar beets have become important cash crops. This picture shows a view of a good field near Taber, Alta.

Increasing Crop Yields

AN experiment to determine the effect of different summerfallow techniques on crop yields was started at the Dominion Experimental Station, Swift Current, Saskatchewan, in 1946. It was found that there was an appreciable difference in crop yields and weed growth following different summerfallow methods.

Differences were pointed up very sharply in 1949 when it was dry and lack of moisture was the chief limiting factor. One field in which the land was worked immediately after harvesting operations were completed and was kept black in the summerfallow year, yielded 9.8 bushels per acre. When cultivation was started before May 15 the yield was 8.2 bushels per acre; June 1 cultivation gave a yield of 7.5 bushels, June 15 cultivated fields yielded 5.0 bushels and fields that were left until June 30 yielded only 2.6 bushels per acre.

The yields of wheat were clearly determined by the date in the previous year on which summerfallow operations were begun. The date of beginning summerfallow also had an effect on the kind and number of weeds in the crop. Fall worked plots were relatively free of weeds. Plots worked previous to June 1 had a fairly heavy growth of Russian thistle but few stinkweeds, while plots worked after this date had a heavy growth of both weeds.

The experiments indicate that early summerfallow not only increases yields but also leads to the production of a cleaner crop.

Runoff Per Square Mile

SURVEYS of spring runoff in western Canada indicate that over a large portion of the southern parts of the prairie provinces, especially the area between the Manitoba boundary and the Rockies and south of the line from The Pas to Edmonton, there was practically no spring runoff. North of this area runoff was very light, but in Manitoba it was fair.

Information supplied from the Experimental Station at Swift Current, Saskatchewan, is to the effect that water loss, due to surface runoff, on the average ranges from less than one-tenth inch depth to over three inches on water sheds in southern Saskatchewan. This is equivalent of five to 160 acre-feet of water per square mile of drainage area. In other words, runoff

may equal the amount of water required to cover one acre out of every four acres a foot deep. This amount, however, would be restricted to the water shed within the Cypress Hills area, or the lower extreme of five acre-feet per square mile of farm land, occurring in the Souris River drainage river basin. Most runoff water results from melting snow. Much of this could be stored in dugouts or dams and be available later for use by livestock, irrigation or in the farm household.

It appears, however, that average figures are poor guides for planning the size of storage reservoirs. To provide dependable supplies over a ten-year period even in the Cypress Hills area, only about one-half the average runoff should be relied on, and as little as one-fifth of the average, for the Souris River Basin. This leads the Swift Current authorities to recommend that for gently-sloping, cultivated farm land of medium texture in southwest Saskatchewan, a drainage area of 150 to 200 acres would be required to guarantee a water supply for most years. If a dugout can be located so as to catch the water from snow trapped in a farmstead shelter-belt, the required drainage area may be less than five or 10 acres.

New Flax Varieties

THE need for more disease-resistant types of flax has led to a search for new varieties. Royal was very valuable during the war, but has lost favor as it has succumbed to races of flax rust previously considered unimportant. A number of new varieties developed at the Central Experimental Farm, Ottawa, and others from some of the Northern States are being given extensive tests on some western Canadian experimental farms in an attempt to locate a satisfactory successor to Royal. Several of these have been licensed for sale in Canada.

"Dakota" has become most widely distributed in Manitoba, says W. H. Johnston, Dominion Experimental Farm, Brandon, Manitoba. It is earlier maturing than Royal, has yielded well, and, though it is not a heavy yielder the quality of oil is good. It is resistant to wilt. It has been considered to have satisfactory rust resistance, but in areas where it is grown extensively it has recently proven susceptible to certain varieties of rust.

"Rocket" has yielded well on Mani-

toba stations where it has been grown. It has been resistant to rust so far, and is moderately resistant to wilt. The yield and the quality of the oil are above average, but the variety is late in maturing.

"Sheyenne" is an early maturing, wilt and rust-resistant flax possessing some tolerance to the frequently harmful pasmo disease. It is only medium in terms of yield of grain and oil. "Victory" is capable of high seed yields, and oil yield and quality are good. It is highly resistant to rust and moderately resistant to wilt, but due to its susceptibility to pasmo it has not been recommended. It matures late.

Flax yields in bushels per acre on test plots at the Brandon station averaged for the last four years: Rocket, 27.3; Dakota, 26.7; Victory, 26.8; Royal, 24.2; Redwing, 22.8; and Sheyenne, 21.1. Flax rod-row tests on 10 illustration stations and sub-stations in 1948 gave comparable results. Rocket and Dakota both averaged 23.3 bushels per acre; Victory, 21.9; Royal, 20.0; Redwing, 19.3, and Sheyenne, 19.1.

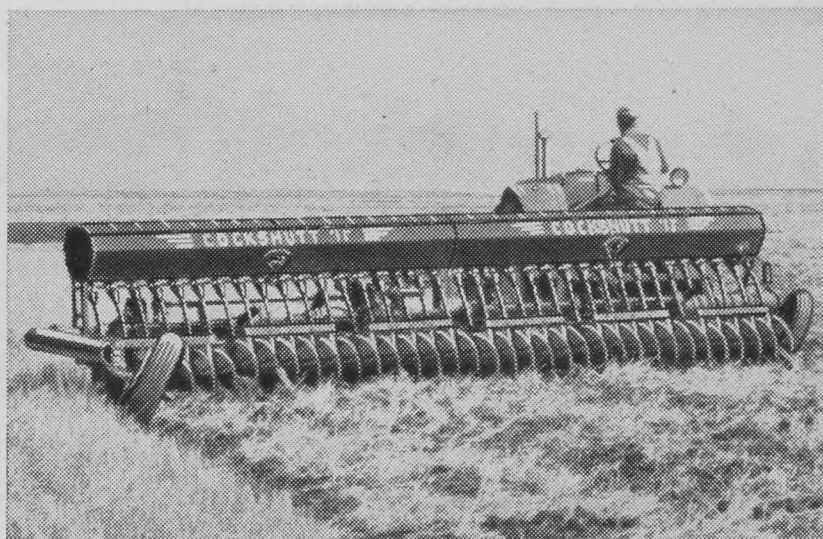
Marquis Not Recommended

"MARQUIS wheat is no longer recommended for commercial production anywhere in Canada," says the Dominion Experimental Station, Lethbridge. This means that we have reached the end of an era in western Canada. Marquis, the wheat which set the standard of quality for bread wheats throughout the world, is no longer recommended for commercial production in the very area which it made famous 41 years ago. Its end was foreseen fifteen years ago when the last serious epidemic of red rust was experienced in Saskatchewan, (which produces about 60 per cent of the Canadian crop) and when the first products of the Dominion Rust Research Laboratory, established at Winnipeg in 1924, began to be distributed. Renown, distributed in 1936, was the first of a long line of promising results from this specialized type of plant breeding.

For a long time Marquis remained popular in the dry, open plains of southern Alberta. In all probability considerable acreages of Marquis will still be grown for some years in this area, because farmers do not always accept recommendations based on experimental results, especially when the experiments are not conducted on their own farms or in their immediate communities. Nevertheless, as the Lethbridge Station reports, Marquis is no longer recommended, "simply because the experimental evidence shows that in the great majority of cases it is more profitable to grow Thatcher."

Over the last 12 years, 97 tests have been conducted over ten sub-stations in Alberta in which Marquis and Thatcher were grown side by side and compared. Average results indicate that Thatcher has out-yielded Marquis by 15 per cent and also that this difference occurred at every station except one. The only exception was at Drumheller, where on a five-year average Thatcher exceeded Marquis only slightly in yield. On the average, Thatcher has a slightly lower bushel weight than Marquis, which in some cases made a difference of a grade. Thatcher also tended to bleach more than Marquis and this sometimes made a grade difference. It is

FOR ECONOMY, THE COCKSHUTT "11" ONE WAY DISC HARROW CULTIVATES, SEEDS AND PACKS AT THE SAME TIME



Speeds Up Spring Tillage and Seeding Work, Combats Soil Drifting and Kills Weeds in Same Operation

Where shallow cultivation is used, the Cockshutt "11" One Way Disc Harrow is a real money saver. Designed for modern, mechanized farming, it helps you cover more acres per day at lower cost per acre. Besides putting in your crop by the "once over, all over" method which destroys weeds as it seeds, assuring grain more plant food and moisture, it is ideal for summer fallow cultivation. Weeds and stubble are left partly sticking out to catch and hold moisture, reduce blowing.

3 Sizes — Self Levelling

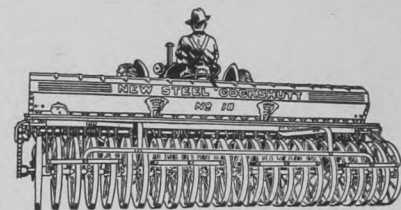
The "11" One Way comes in 12, 15 and 18-foot cuts with six 18" discs mounted to a section. Each section operates independently so the machine hugs the natural contours of the ground. The result is an even seed bed at moisture level that aids quick germination, vigorous growth and uniform ripening.

Famous "Rudder Control"

The "11" One Way has the rear wheel placed far behind the gang—a special Cockshutt feature—to hold the machine to a steady line of draft even in hard ground.

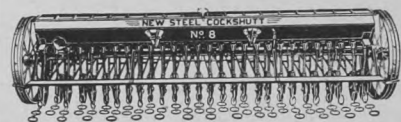
Another special Cockshutt feature is the hand crank that enables discs to be raised if machine becomes "bogged down" in a soft spot and power lift cannot operate. For complete details, drop in and have a chat with your friendly Cockshutt dealer.

Two More Good Reasons Why Cockshutt Seeding Pays



COCKSHUTT "18" PRESS DRILL

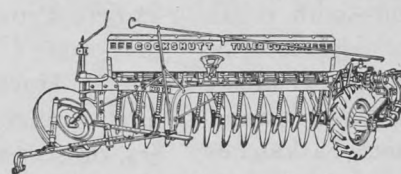
Designed especially for light loose soil. Smooth-running press wheels pack soil firmly over seed to retain moisture, retard blowing. 20- and 24-run sizes.



COCKSHUTT "8" STEEL DRILL

A light running drill with an all-steel frame built like a bridge for extra strength and rigidity. Unbeatable for accurate, controlled seeding. High steel wheel or drop axle rubber tired models. 20-, 24- and 28-run sizes.

"33" Tiller Combine for Heavy Soils—Hard Conditions



Here is another famous Cockshutt Machine, designed, like the "11" One Way, for "once over, all over"

tillage. The "33" is a deluxe model particularly suited to heavier soil and harder conditions where greater weight is required. It features Cockshutt "Rudder Action" rear wheel, fingertip power depth control, Timken roller bearings and felt-protected end thrust gang bearings for light draft, extra fuel economy.

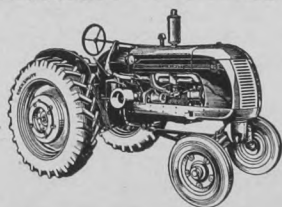


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REMEMBER...IT'S THE COCKSHUTT "40" FOR '50

"No other to compare with the D2 ...for breaking and working-down land"

...BEN SOKE, JR., SALTCOATS, SASKATCHEWAN



◆ Brushy, root-matted sod—with rocks and occasional stumps for extra complications. Yet even after a November snow, the "Caterpillar" Diesel D2 Tractor owned by Soke Brothers, Saltcoats, Saskatchewan, steadily pulls the heavy 24-inch breaking plow.

Note the plowing depth under these severe conditions! That tells you the broad tracks have all-soil, all-weather traction to "harness" heavy-duty pulling power.

When it's time to prepare for seeding, the tracks bridge across uneven footing, keep the traction to pull heavy seedbed tools. And Soke Brothers' D2 works on less than 1½ Imperial gallons of Diesel fuel per hour (average).

"For breaking and working-down land, there is no other tractor to compare with the D2," states Ben Soke, Jr.

Prairie Province owners will tell you that there's nothing like "Caterpillar" Diesel Tractors for pulling extra-work hitches of tools, like weeders and seeders, on soft summer fallow—for gaining important crop-making days in Spring—for setting the world's crop-production economy pace!

The hour meter on Soke Brothers' D2 registered 9253 when photographed. "Caterpillar" Diesel Tractors that have worked 25,000 hours and more (equal to 25 tractor years on the average Prairie Province farm) are still going strong. Why miss the satisfaction and profit advantages of farming with this *proved* Diesel power?

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See your "Caterpillar" dealer about a demonstration of your ideal size.

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CATERPILLAR DIESEL

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recorded, however, that these occasional losses of grade were "always made up for in the difference of yield."

Thatcher shatters less than Marquis, especially when high wind hits a mature crop. Also, the seed is a little more difficult to thresh because it is held tighter by the plant.

This gradual crowding of the world-renowned Marquis off the centre of the world's wheat stage is an outstanding illustration of the fact that science has come to the farm in real earnest during the past thirty years. Marquis may hold its corner of the stage in a very limited area for a few more years, but the increase in knowledge which man is steadily gaining through the activities of energetic plant breeders, who are constantly scouting for more economical varieties of our chief crops, will no doubt eventually produce varieties superior to Marquis, even in those areas where it still maintains its tenuous hold.

Licensing New Varieties

IT is the most natural thing in the world that farmers should be interested in new and apparently superior varieties. At one time the only way new varieties or improved grades were secured of existing varieties, was by the work of individual farmers who, through years of careful selection and attempts at improvement, achieved results that were satisfactory. Today, the great majority of our new varieties come from the work of plant scientists, professional plant breeders largely in the employ of experimental stations or universities. The objectives of the plant breeders are becoming so much more precise and defined than used to be the case, that it is seldom that an individual farmer can afford the time and expense that is involved in creating a new variety.

Nevertheless, according to the Dominion Department of Agriculture, a number of farmers every year seek to introduce new potato varieties, for example, for sale in Canada. Unless the new variety is licensed under the provisions of the Dominion Seeds Act, passed in 1937, the sale of such a new variety is illegal. This is true with respect to all seeds covered by the Dominion Seeds Act, which includes practically all, if not all field crops. The licensing of new varieties is effected by the Dominion Department of Agriculture and to secure the licensing of a new variety the procedure is as follows:

1. Application must be made for the licensing of a new variety, to the Plant Products Division, Dominion Department of Agriculture.

2. The application must be supported by experimental evidence showing that the new variety is different and superior in some important characteristics, or economically superior, to varieties already established.

3. If the experimental evidence submitted is not conclusive, the Plant Products Division must refer the matter to the Director of the Experimental Farms Service who, in turn, may require the applicant to supply a sample of the potatoes or other seed, which will be grown, in the case of potatoes, in the national potato trials.

4. A detailed description of the variety with regard to type, growth, period of maturity, range of adaptability, disease resistance and other characteristics, desirable or undesir-

able, must be provided before licensing.

5. Only varieties which are licensed for sale are eligible for certification which is a service provided by the Division of Plant Protection, in the Science Service of the Dominion Department of Agriculture.

Treat Seeds In Time

THERE is still no easy and convenient method of treating seed grain for loose smut of wheat or true loose smut of barley. Control can be secured by the hot water treatment but this is difficult to apply on most farms. Bunt, however, can be controlled quite satisfactorily, and seed known to carry bunt smut should be treated.

The Dominion Experimental Station at Swift Current advises treating oats and barley seed each year, using a recommended fungicide and carefully following the directions given for applying it. Seed treatment will not, however, control root-rot organisms, as this infection comes from the soil and there is no evidence that any appreciable amount of protection to the seed from these diseases is afforded by seed treatment.

Several commercial fungicides are available for seed treatment, but these vary somewhat in their characteristics. The Swift Current Station summarizes information supplied by the Dominion Laboratory of Plant Pathology, Saskatoon, with respect to six commercial fungicides.

"Ceresan applied either as a dust, slurry (suspension in water), or dip, gives excellent control of most smuts. It also gives protection to weak or cracked seeds against decaying organisms. Ceresan is very poisonous to humans and must be handled with care. Wear a mask when handling treated grain or when treating grain.

"Leytosan is similar to Ceresan in its properties. The above remarks apply to both fungicides.

"Panogen is a good fungicide in which the active chemical is carried in a light oil to eliminate the dust nuisance. It is quite poisonous to humans and care should be taken not to let it come in contact with the skin.

"(Seed wheat should be treated at least 24 hours before seeding for effective results with Ceresan, Leytosan or Benesan. The same caution will also improve results obtained with Panogen and Anticarie, S.D. Seed oats and barley should be stored for a week after treatment for best results. If seed grain is dry when treated with Ceresan, Leytosan or Panogen, it may be stored for months without injury to germination.)

"Anticare, S.D. is a relatively non-

poisonous dust treatment. It gives good control of smut of wheat, but has not proved effective against the smut of oats and barley.

"Benesan is effective against both wireworms and smut. However, it is quite expensive and will be used as a smut treatment only where wireworms, as well, are to be controlled.

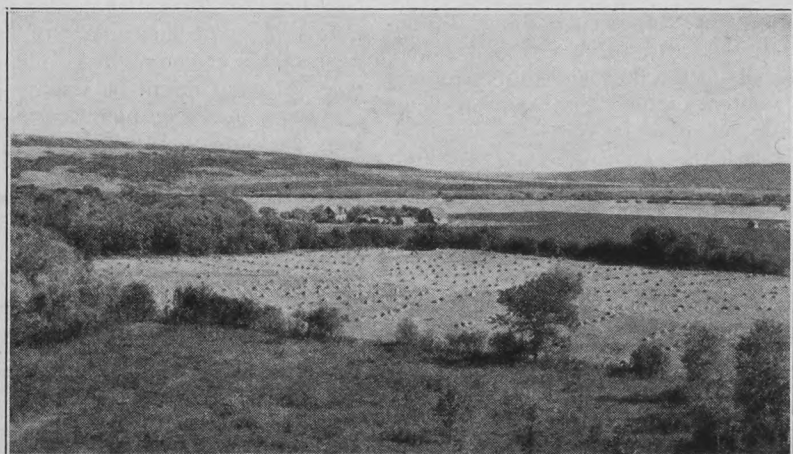
"Formalin gives good control against most of the smuts but tends to injure the seed, so that its use is not recommended."

Chemical Summerfallow

THERE has been quite a lot said and written about the possibility of keeping summerfallows free of weeds by the use of chemical weed-killers rather than by tillage. It was natural that this suggestion should occur to the scientists as soon as the selective weed killers were developed. It is the business of a scientist to use his imagination and to reach out as far as it will permit, in an endeavor to find out as much as it is possible to discover about the application of a new scientific achievement.

Under summerfallow conditions, however, chemical treatment has not been found helpful. At least this is the conclusion of D. A. Brown, Dominion Experimental Farm, Brandon, after three years of experimental work. Herbicides or chemical plant killers can be used to replace tillage for weed control only under special conditions and then only to a limited extent, according to Mr. Brown. One important limitation lies in the fact that "with few exceptions fields are infested in varying degrees with weeds immune to 2,4-D, such as wild oats, quack grass, cockles, blue lettuce and other species that are largely resistant, including wild buckwheat, flat spurge, certain pigweeds and Russian thistle.

Attempts have been made to drill spring grain into weedy land and then use 2,4-D as a pre-emergence spray instead of cultivation. This method has not met expectations, according to Mr. Brown, nor has spraying the crops heavily with 2,4-D a few days after seeding produced any appreciable weed killing at Brandon. It is suggested, however, that where soil is likely to blow when cultivated and the principal weeds are stinkweed and common mustard, herbicides can profitably replace tillage in early spring and late fall. Nevertheless, the work done at Brandon leads to the conclusion that, "aside from weeds in growing crops and patches of highly obnoxious weeds on locations that cannot be cultivated, tillage can generally be employed for weed control at less cost and with better results than the use of herbicides."



Scene in the Qu'Appelle Valley 12 miles west of Rocanville, Sask.

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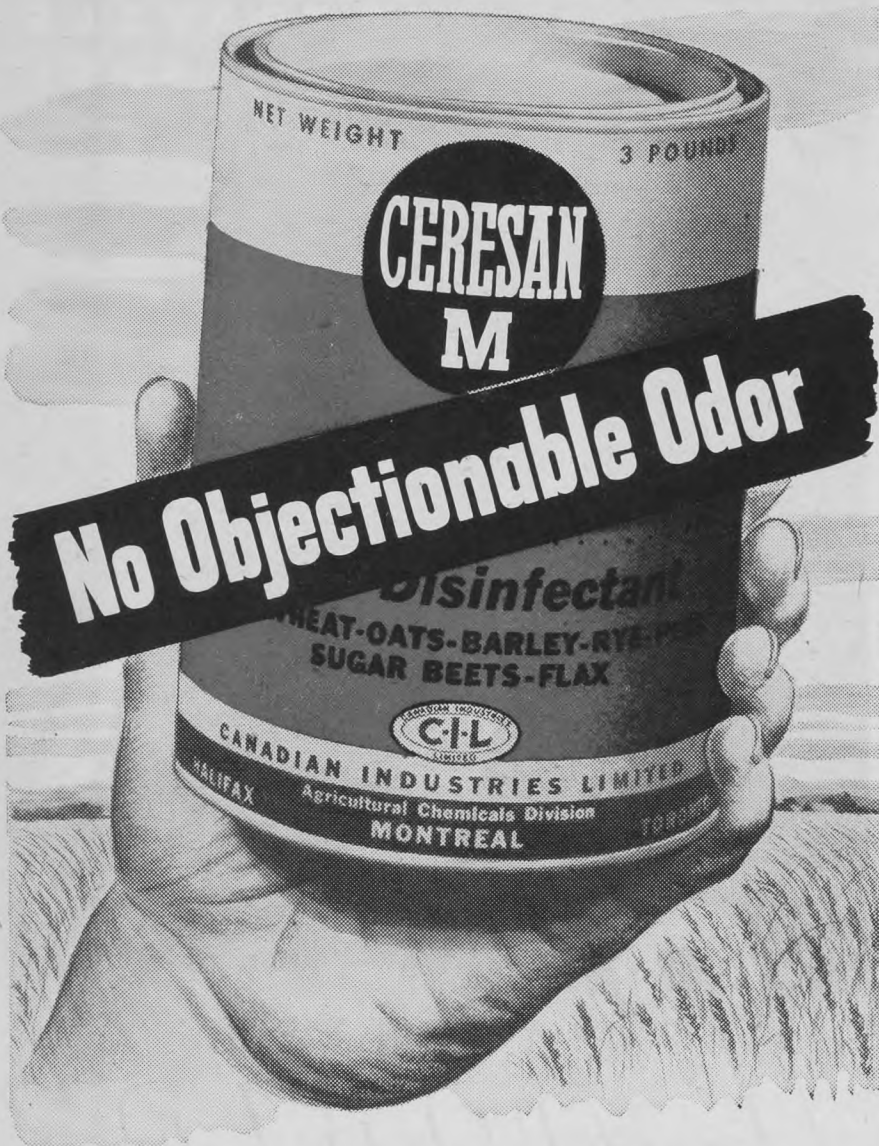


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C-I-L Announces The New Seed Disinfectant "CERESAN" M



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"Ceresan" M is low-cost insurance against profit-stealing smuts, seedling blight and root rot. "Ceresan" M gives two-way protection; kills smut on seed and protects against soil-borne diseases—but does not weaken germination. Yes, for only 3¢ to 4¢ per acre, "Ceresan" M gives you higher yields, cleaner grain . . . real profit-making crop insurance.

Easy to use . . . Effective . . . Costs Little

"Ceresan" M makes seed treating easy and convenient, too. "Ceresan" M has no objectionable odor, and you can treat seed up to six months before planting time—have it stored and ready for seeding. (Seed should be treated at least 24 hours before seeding.)

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This year, and every year, protect your crop and increase your profits by treating your seed with "Ceresan" M. Available at your local farm supply store.

"Ceresan" M is a new mercurial seed disinfectant replacing the well-known "Ceresan". It is equally effective, with the added advantage of being free from objectionable odor.

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Seed Disinfectants

Unifine

Continued from page 17

principally of two concentric wheels. The inner wheel, or rotor, revolves at a very high speed, as much as five miles per minute at its outer edge. The outer wheel is equipped with small removable stator blades fitted together. The wheels stand vertically with an inlet and outlet casting at the top. The clearance between the two wheels is greater at the inlet and narrows as the wheat moves around the perimeter, until it is least at the outlet. In a single operation the whole wheat is ground into a very fine, fawn-colored flour.

WHEN baking experiments were begun with Unifine flour, it was found unsatisfactory to use the same formula with which good white bread is made. Tests were made using different quantities of water and yeast, and whole milk solids were added, as well as some modification introduced in the fermentation and proofing practice. Most of the wheat grown in the northwestern states is a lower protein wheat than the hard spring wheat grown in the northern and central plains, so that it was deemed advisable to base procedures on 11.7 protein wheat. Eventually, by increasing the amount of water and sugar and by adding milk solids, a suitable formula was secured by which certain steps in the process were eliminated and the total time for fermentation and proofing decreased from 235 to 180 minutes.

Whole wheat flour normally produces a small volume loaf. Consequently, if in one operation the whole wheat kernel could be ground to sufficient fineness, and if the resulting flour would keep without going rancid owing to the retention of the fat from the kernel, and if, in addition, satisfactory loaf volume could be secured, a worthwhile and somewhat revolutionary result would be achieved.

Unifine flour, I was informed, will produce exactly 100 pounds of finely-ground whole wheat flour from 100 pounds of clean wheat. "More important still," I was told, "is the fact that it is possible to make more bread out of less flour if it has been ground by the high speed mill." It was thought possible that this additional bread could be attributed to the greater ability of Unifine flour to absorb water.

The new flour seems to keep well in storage without going rancid. At the time of my visit, flour had been kept in storage for 20 or 21 months without showing rancidity. Storage tests had been made under differing conditions, but still the flour remained sweet. Inquiry on this point brought the statement that this remarkable keeping quality is attributed to the extreme fineness of the flour and to its Vitamin E content, which is absent in flour made by other processes. I was told also that the new system seems to liberate the valuable mineral salts, malt sugar and vitamins in a form more directly assimilable into the blood stream of the human being.

A considerable amount of consumer preference testing has been done. Quite a bit of this has been in the College dining hall, but commercial tests were made with one large Spokane concern which tried it out with the bread made from 15 tons of

wheat. This was a big job for the little College mill, which will only turn out 100 pounds of flour per hour. For the initial commercial step 10 tons of wheat were put through and the bread seemed to please bakery customers so well that a further five tons were milled. When the supply of Unifine flour ran out and it was not practicable to mill more for commercial testing at the time, the concern in Spokane managed to obtain flour from a commercial mill, which was forced, however, to exclude a portion of the bran.

I learned that insect damage during wheat storage is quite a problem in the northwestern states. It, therefore, becomes a problem in flour milling and flour storage. Insect damage had not, however, presented any noticeable problem in the case of Unifine flour. Loaf volume from Unifine flour is considered quite satisfactory, though not as large as from the patent flours with which it was compared. The relationship was as 645 for Unifine flour to 825 for the patent flours and 418 for a straight commercial whole wheat flour. When the speed of the grinder is cut from 1,200 to 900 revolutions per minute loaf volume tends to increase, though something is lost in the fineness of the grinding. At the highest speed, 84 per cent of the Unifine flour passed through a screen of 139 apertures to the inch; at 900 rpm only 80.5 per cent would go through this screen. Loaf volume varied also with variety. Turkey Red, the standard variety used in the tests, gave the best loaf volume of five varieties tested. Thatcher, one of the five, rated well over 600 and substantially more than two northwestern states varieties, Baart and Golden. Both of the latter were low protein varieties.

What scientists call the "biological" value of Unifine flour was studied by feeding it to rats, and noting the growth made by the rats and the protein efficiency of the flour as compared with other sources of protein. "The results," to quote Miss Corbett's study, "indicate that Unifine has a higher biological value than both patent and whole wheat flours," but "the apparent digestibility of Unifine was lower than the patent and whole wheat flours."

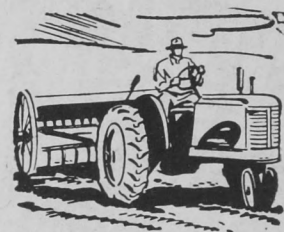
I saw and tasted the small experimental loaves of Unifine bread which were in process at the time of my visit. Being a regular consumer of brown and whole wheat bread, I liked them. The flavor to me was excellent and the texture fine. Whether this new process would have much of a place outside of this special area where soft wheats are grown in the United States, or other similar areas, it is, of course, too early to tell. The simple milling process might be practicable perhaps for small local mills or co-operatives.

There is a strong prejudice in the minds of most consumers of bread, against the colored loaf. That uncolored bread might be less healthful appears a small consideration in countries such as the United States and Canada where the dietary of the people is just about the highest in the world and where the variety in diet is very wide. For 70 to 80 years the power of advertising has been strongly behind the white loaf. The newer knowledge of nutrition has brought with it synthetic vitamins, together with the modification, enrichment and fortification of wheat flour. All of these factors tell against whole wheat flour of any kind.

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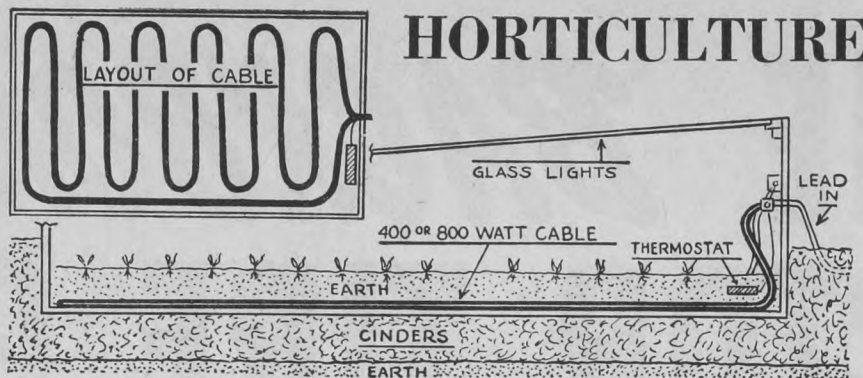


Diagram showing cross-section of an electrically heated hotbed, thermostat and arrangement of cable (inset, top left).

Electricity Will Heat Your Hotbed

Two systems of electrically heating a hotbed

by CHARLES WALKOF

GARDENING, like many other farm activities, stands to benefit by rural electrification. Hotbeds, previously heated by decaying horse manure, can now be serviced conveniently by electricity. With the present limited number of horses on most farms, gardeners must of necessity turn to other sources of heat for hotbeds.

Heating hotbeds with electricity has many advantages. Electrical heat can be regulated and thus produces a uniform and persistent temperature. It is clean heat. In manure-heated hotbeds great care must be taken to prevent overheating and to avoid ammonia fumes which will injure growing plants. In an electrically-operated hotbed there is less danger of fungus diseases, such as damping off, which is frequently found in the manure hotbeds.

There is little work to the preparation and care of an electrically-heated hotbed. Two systems of heating are used. One is to place a specially made cable four to five inches under the soil surface, and the other is to use 150 to 200-watt overhead lamps.

The electric cable method produces bottom heat, which is preferred, particularly for starting melon plants. A hotbed frame, 6 x 12 feet in size, requires a specially made 60-foot cable and a thermostat. The cost of these vary from \$16 to \$23. The electricity used during the season would approximate \$6.00 to \$8.00. The amount used will depend on how well the frame is insulated.

When constructing a hotbed for cable heating, the soil should be prepared and the cable put in place in the fall. The full size of the hotbed frame is marked out and the soil in this area dug out to a depth of eight inches. Then two or three inches of coarse gravel, or preferably coarse cinders, are placed in the bottom. The cable is then placed on the cinders in a regular twisted pattern so that it covers the whole hotbed area. Next, a one-inch covering of fine moss, or sawdust, is placed over the cable and the remainder filled in with rich topsoil. The seed or plants can be started in the newly-filled-in soil, if desired. However, if plant boxes are used it is advisable to have only three inches of soil over the cable so that the boxes will be close to the source of heat.

The system employing electric light bulbs is preferred at this station. In a hotbed 6 x 12 feet in size, four 150 or 200-watt clear glass bulbs are used. The advantage of these is that they

heat the air in the hotbed frame as well as the soil surface. This is a particularly desirable feature on frosty spring nights. In fact, the light from the bulbs also encourages plant growth, especially on cloudy days. Tomatoes, eggplants, peppers, cabbage and cauliflower plants grow well in such an environment. The electricity used by the bulbs varies with the tightness of the frame. The cost should average \$4.00 to \$5.00 per season. A thermostatic control of the lights is desirable.

The location of the electrically-operated hotbed will, in many cases, affect the amount of electricity used. A sheltered location on the south side of a building is most suitable. The usual chores of plant culture in hotbeds, such as watering regularly and ventilating on calm days, must be conducted with as much care as in the manure-heated unit.

(NOTE: Charles Walkof is specialist in vegetable crops at the Dominion Experimental Station, Morden, Man.).

Apple Taste And Aroma

THERE are at least 26 chemical compounds involved in the flavor and the fragrance of an apple. The pleasing taste and aroma of the fruit and of apple juice are due mainly to certain volatile constituents. Over a period of three years U.S. chemists working in a regional research laboratory in Philadelphia succeeded in identifying 20 more chemical compounds which affect taste and aroma in apples and apple juice, than the six previously segregated. These compounds occur in exceedingly small amounts, but about 92 per cent of them consist of various alcohols, about six per cent of carbonyls, and the remaining two per cent are esters.

This work was done in order to help in the improvement of the quality and the methods of production of apple essence, a flavoring extract, and the study has pointed the way to investigations of the volatile constituents of other fruits and vegetables as well as of tobacco, silage and forage crops.

Native Trees Of Canada

A VALUABLE addition to the library of any horticultural enthusiast or nature lover would be a copy of "Native Trees of Canada" (King's Printer, Ottawa, price \$1.50). This is a book of outstanding value and usefulness, which is the fourth edition of a publication first printed in

HORTICULTURE

STRAWBERRY AND RASPBERRY PLANTS

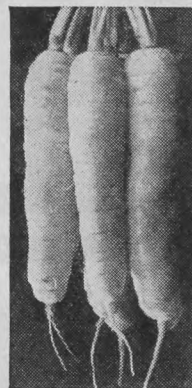
STRAWBERRY—Glenmore, Glen, Glenheart: 25 for \$1.25; 50 for \$2.25; 100 for \$4.00 (prepaid).
RASPBERRY—Madawaska, Newman, Viking: 25 for \$1.50; 100 for \$5.00 (collect, by express only).

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1917. It has been completely revised both as to new maps and illustrations, and the treatment of the material has been thoroughly modernized.

The various species are treated uniformly throughout with text, on one page, including a listing of all common names as well as the scientific name, a small range map showing the distribution of the species in Canada and northern United States and, on the opposite page, photographic illustrations of distinctive parts of the plant, such as the needles, cones, bark, seeds, flowers, buds and the mature plant itself. It is equipped with a good index, an alphabetical list of botanical authorities, a list of English and French names of all the species and with end papers showing the forestry classification of Canada. The Dominion Forest Service has also made the book much more attractive by the addition of some bright, realistic and appealing color illustrations.

March May Bring Sunscald

MARCH is a good month during which to guard against sunscald on varieties which suffer from this type of injury. You can wrap some of the larger branches or the trunk with burlap or light colored building paper, or stand a board or two on the south side of the tree so as to shade the trunk. Anything to provide shade will do the trick.

Sunscald develops from the repeated thawing during the afternoon and the freezing at night of sap on the south side of the tree, when the sun first begins to warm up in the early spring. This alternate freezing and thawing breaks down the cells, causing an injury which later in the year shows up as splitting and rotting of the bark, and perhaps the eventual killing of the trees.

The Pruning Of Shrubs

SPRING pruning, whether of most shrubs or fruit trees, is best done after the severe cold of winter is over and well before the buds have started to swell. Some shrubs bloom on woods produced during the year of bloom. Others bloom on wood grown the previous year, and with these shrubs, the Dominion Experimental Station at Lethbridge recommends pruning after the blooming season is over and then only often enough to keep them within bounds. Those blooming on new wood need spring pruning, and the recommendation is to first remove all dead and weak wood right down to the ground. Thin out the balance to a few of the healthiest canes and cut these back to just above the second or third bud on last season's growth.

These are some Lethbridge recommendations for some common shrubs:

Barberry, caragana and Russian olive. No regular pruning necessary except to shape.

Dogwood. Only thin and cut back in the spring to prevent bushes from getting leggy.

Hawthorne. Immediately after flowering, cut back the flowering wood to the second or third bud. Thin enough to retain shape.

Honeysuckle. Thin after three or four years by removing old wood after flowering.

Flowering apples. Cut back the flowering wood to the second or third bud just after flowering. Thin

branches as necessary during the dormant season.

Mock orange. Only thin out the old wood every few years.

Flowering plum. Cut back the flowering wood to the second or third bud shortly after flowering.

Roses. Hybrid T's and perpetuals are thinned out and cut back severely each spring. Remove weak wood and cut back last year's growth to the second bud. Other kinds require little regular pruning except to shape. If they become long and leggy, cut back very severely in the spring.

Willows. When grown for colored bark cut back severely each spring.

Spirea. Those with flowers or buds from last year's growth should be thinned only occasionally, immediately after blooming. Cut the wood which had flowered, to a point where the young growths are formed.

Lilac. No regular pruning except to remove suckers and dead flowers just after flowering. Allow one or more well-placed suckers to grow each year, so that when old stems become very leggy they can be completely removed.

Fruit-Bearing Shelterbelts

A GREAT deal more can be done in the prairie provinces in the direction of planting shelterbelts. These are highly beneficial, not only on farms but along roadsides and around towns and villages. Morden recommends a snow trap and a shelterbelt of three or more rows of trees along the northern and western sides of towns and villages, so as to deflect cold, drying winds upward, bring snow drifting under control, and provide favorable settings for recreation areas. Such shelterbelts also attract song and game birds, appearance is also improved and, inside the shelterbelt, snow water can be caught for irrigation and for filling swimming pools.

It is reported that the Alberta Minister of Agriculture, Hon. D. A. Ure, plans extensive encouragement of tree and shrub planting along highways and across fields. Here, fruit-bearing materials such as Redvein crabapples, Siberian crabapples and hardy stone fruits are being tried.

John Walker, Superintendent, Dominion Forest Nursery Station, Indian Head, points out that using fruit-bearing plants for a shelterbelt certainly increases the supply and variety of home-produced hardy fruits, adds interest and color to the shelterbelt, and attracts beneficial birds. He says that the Korean cherry and Siberian currant will provide surface ground cover in place of caragana, while the high-bush cranberry and hardy crabapples will replace ash or other trees commonly used on the inside row.

Mr. Walker does not advise using chokecherries, Missouri currants, sand-cherry or wild plum, because these normally produce many suckers from a widespread root system. These suckers rob adjacent plants, besides which, more work is required to keep the shelterbelt margin free of suckers. He suggests that in locations favorable to them, the fleshy hawthorne, gooseberry, mountain ash and Bing cherry, red currant, red elder and saskatoon can be useful. Plants of these kinds are not distributed from forest nursery stations, but must be obtained from nurseries.

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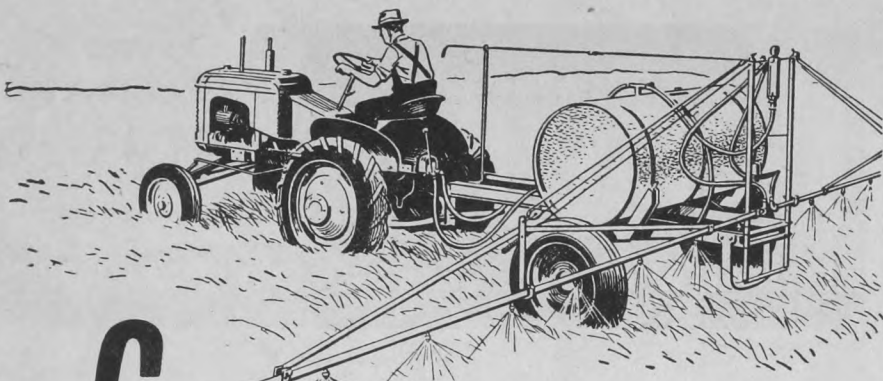
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Massey-Harris
306 DRILL
stands up!*



Market Cattle

Continued from page 9

cents out of each dollar. In 1939 dollar sales were \$77,000,000 and the profit was 1.61 cents out of each dollar. This tends to suggest that profit on the sales dollar goes down as the dollar turnover goes up. In 1949 the profit on a steer that fetched \$200 was \$1.52. In 1939 the profit on the same value of sales was \$3.22, though at that time it would be divided between several animals.

THE only government grading that is done on beef is on the carcasses in the cooler. With the exception of British Columbia only the best carcasses are graded. The best grade of carcass is the "A" or "red" brand, and the next best is "B" or "blue" brand. The definitions of these grades are laid out in government regulations, which indicate the general qualifications that a carcass must possess in order to be graded and stamped as belonging to either of these top grades. All animals that fail to reach the minimum quality of the blue brand are ungraded, and popularly called commercial beef. It can include any-

quality. The carcasses shall be relatively short and blocky, heavily and uniformly fleshed throughout. Rounds, loins and ribs shall be very well developed, chucks and plates shall be very thick and heavily fleshed. The neck shall be short and well filled. Shanks shall be short and well muscled.

"The flesh shall be firm, velvety, fine-grained, and of an attractive light or cherry red color.

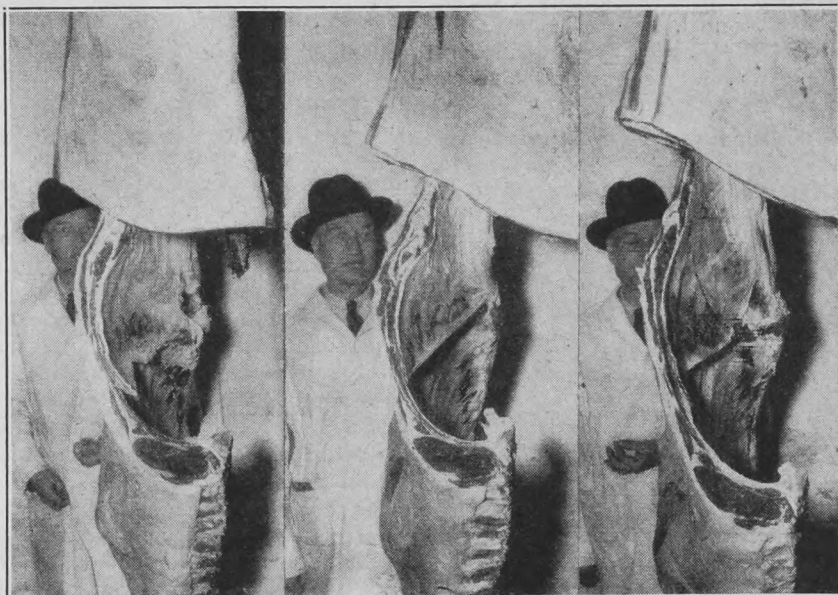
"The cartilages on the chine and breast bones shall be pearly white and the bones soft and red, except that in the heavier carcasses the cartilages may be slightly ossified, and the bones slightly hardened and of a grayish white color.

"The exterior surface of the carcass shall be covered with firm fat, white or slightly high in color. This fat should as a rule be smooth, but may be slightly wavy.

"In the case of carcasses from fed calves a lesser degree of finish is required than for heavier carcasses.

"An excess proportion of fat to lean shall debar a carcass from this grade. Each carcass in this grade shall have a cold weight of not less than 300 lbs."

The qualifications required of a



Les Hancock, District Livestock Supervisor, Dominion Department of Agriculture, displays (left to right) red, blue and commercial carcasses of beef illustrating good covering and even fleshing on the branded beef comparing favorably with the commercial quality on the right.

thing from grain fed steers not quite good enough to be blue carcasses, to poor quality or thin animals a little too good to be used for the processed meat trade.

The grading of red and blue brand beef is actually consumer grading. The grades that are placed on these best carcasses follow from the cooler at the packing plant through to the final consumer, and the housewife who buys this meat knows that it has been examined by a qualified grader in the employ of the government and that he has pronounced the carcass to be of good quality.

The grader does not grade only according to his own impressions. He grades according to his interpretation of the Livestock and Livestock Products Act regulations respecting the grading and branding of beef.

It is interesting to note the distinctions given under the Act for Grade A (choice—Red Brand) beef. The Act directs that:

"This grade shall include only choice carcasses of steers and heifers having the following characteristics: Excellent conformation, finish and

Grade B (blue brand) carcass are similar, though somewhat less stringent. The further grades are Grades C, D (divided into three classes), M and S. The Class M includes carcasses in which meat will chiefly be processed or canned and S includes stags and bulls.

In British Columbia all qualities of cattle are graded by government graders. This is done under provincial government regulation. The Federal Livestock and Livestock Products Act sets out the grade standards, as indicated above, but there is nothing compulsory about the Act. In all provinces, with the exception of British Columbia, the packers request the services of government inspectors to pick out the red and blue brand beef. If they did not request this service even this limited grading would not be done. When the service is asked for it is quickly provided. The only time that the grading is compulsory is when a provincial act is passed, as in British Columbia, directing that all beef shall be graded. In that province all beef is graded and branded in the packers' coolers and it

is required that in the retail store a card be placed with meat offered for sale indicating government grade, as well as price. This winter the Saskatchewan government has made government grading of lamb carcasses compulsory, and it is in the cards that compulsory grading might be extended to beef.

Carcass grading appears to be increasing in popularity. However, there appears to be less producer and consumer demand for it than might reasonably be anticipated. From the point of view of producers it should be desirable, in that if an animal is graded on the rail and the price is based on the carcass quality, the producer is paid for exactly what he produces. From the point of view of the consumer it means that instead of making an uneducated guess as to the quality of meat—outside the red and blue brands—the housewife can be guided by a government evaluation of quality attached to every cut that she buys. This, in turn, is likely to strengthen the beef market insofar as a customer is typically more confident in purchasing a standardized product.

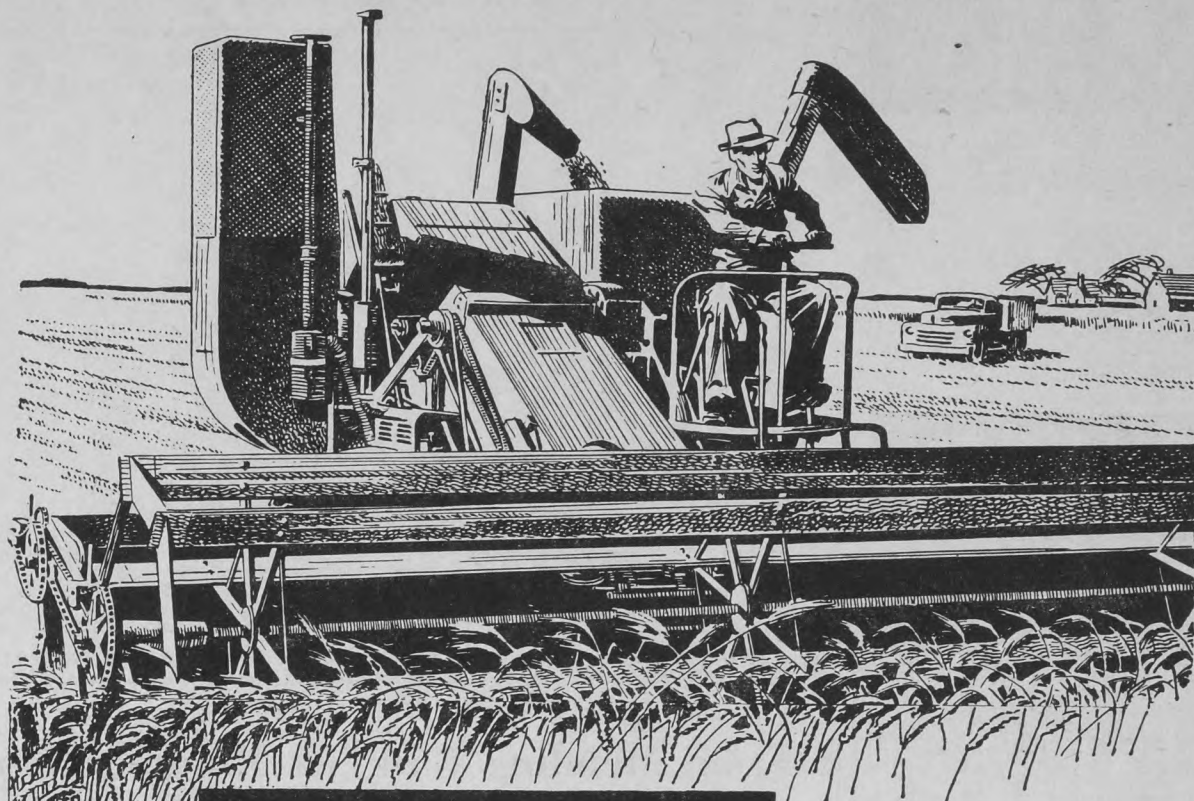
This is not to give the impression that only the better end of the choice and good beef carcasses are good. Anything that comes onto the market is sold. There is always a supply of poor animals and there is no record of animals being shipped back to a producer because no one would buy them in the yards. If an animal is not diseased it will make food. It might not make a Sunday roast for a demanding consumer, but when it is processed and sold in a can or as sausage meat or beef sausage it will very likely be sold to the same consumer. This is not to suggest that the consumer is buying a product that is inferior. All meat is good for some particular purpose, and as long as it is offered for sale in the form in which it is most suitable there will be a demand for it. Less than a third of the animals that go to market in Canada are choice or good. An increasing proportion are worn-out dairy animals. The market can and does absorb them all, and all are finally good food for someone.

Raven Plays Possum

One bird saves his food by fooling others

AN old raven was feeding on the carcass of a wildcat in view of our house. It had been feeding for some days. It walked across the ice to its roost and back, because, although it could fly, it was either too full or too lazy. One morning it rolled over, apparently dead, at the feast. Soon another raven swooped down over the carcass, but after flying around for a while flew away again. This performance has been repeated almost daily.

When we see the raven fall over playing dead we soon see another raven come around to look over the carcass. Now it's anyone's guess as to what is happening, but it looks as if the one raven is deceiving the others that it's a poisoned carcass and it has died eating it. At any rate the other raven is no sooner out of sight than the raven playing possum is up eating again.—Alex Woods, Canoe Point, Sicamous, B.C.



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IF YOU WANT to make extra money on the farm follow this plan. When everyone is planting a lot of potatoes, turnips, raising a lot of pigs, chickens, or turkeys, do not go in so heavily. But when the prices have been low the previous year and your neighbors are not growing or raising as many of the above or going out of them altogether, you raise more, and you will make more money. This is one year you should raise your usual number of chicks and start them early and buy the best R.O.P. Sired available in the breeds you desire. Also Turkey Poults, non-sexed, hens or toms. Also older pullets. Free catalog.

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It will pay you to use this simple, easy, economical method proved effective on thousands of poultry farms. Apply Black Leaf 40 to roosts with the handy Cap Brush. Fumes rise, killing lice and feather mites, while chickens perch. One ounce bottle treats 60 feet of roosts—90 chickens. Also available in larger sizes. Full directions in every package. Ask for Black Leaf 40, the dependable insecticide of many uses.



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Part of the poultry flock belonging to W. G. Lyons, Vermilion, Alberta. The flock includes 300 Leghorns and the same number of New Hampshires and Barred Rocks.

From Mending Cars To Minding Hens

W. G. Lyons left his Toronto business and is making a living on a poultry farm at Vermilion, Alberta

FOR 13 years W. G. Lyons worked in a garage in Toronto. He played around with a small poultry flock as a hobby. One day when he was working in the garage he had the misfortune to be knocked out by carbon monoxide. Following this experience he found that he was very sensitive to gases around the shop and he was faced with the necessity of expanding his part-time hobby to a full-time business.

Mr. Lyons developed an R.O.P. flock on his poultry project northwest of Toronto. There were a lot of poultry breeders in the area and he experienced no trouble in getting rid of his high quality breeding stock at attractive prices. Extra eggs could also be sold readily and profitably. He supplied his own regular route every Friday, and in addition to this he supplied three stores and a restaurant. The poultry business was going well but Mr. Lyons' health was not too good and in the fall of 1946 he finally took his doctor's advice and sold out and moved West.

He bought a place on the outskirts of Vermilion. He had brought 300 Leghorns with him and he and the family continued their R.O.P. production. Mr. Lyons did not consider R.O.P. production to be much more profitable but he enjoyed it more than he did commercial production. However, within two years he felt that he would have to go out of R.O.P. because of the extreme difficulty in hiring experienced help. When he is again able to get help that he can rely upon he may go back into it. In the meantime he keeps 300 laying Leghorns, and the same number of both New Hampshires and Barred Rocks, and sells chicks.

In the spring of the year Mr. Lyons hatches all of his own eggs. In addition to this three neighbors have flocks and he buys their eggs and hatches them also. He keeps a fairly close eye on these flocks, on the ground that if he is going to sell and guarantee chicks, he must have a little something to say as to the management of the flocks from which his eggs come. He finds that the flock

owners are glad to discuss their problems with him.

Last year he started the incubators the first week in February and took out the last hatch on the 24th of June. He sold approximately 24,000 chicks. To his surprise the local demand was enough to take almost his whole hatch. He shipped 300 but all of the rest were picked up right on the farm.

His income comes almost entirely from the chickens. He has only 52 acres of land. He grows some of his own feed, and has some pasture. In addition to the chickens he has three cows to provide milk for the family. He also keeps two brood sows, and finds that any eggs that fail to hatch make satisfactory pig feed, so manages to reduce the waste that would attend throwing these eggs away.

Perhaps the most interesting aspect of the whole story is the fact that a man who knew chickens moved into a district that does not claim to be much more poultry conscious than any other and makes a living out of poultry production.

Lowering Mortality Rates

THE quickest and most efficient way of reducing the profit from a flock of poultry is to allow your birds to die. The loss is not only the market value of the bird; it is also the loss of the eggs that the hen would have laid if she had survived.

Poultry breeding work at the Dominion Experimental Station, Harrow, Ontario, has shown that some family groups show greater longevity than others, but the issue is clouded by the fact that some males when bred more than one year vary as to daughter mortality. When males show a consistently low family depletion during two or more years of tests, it is assumed that their progeny will have something extra in the way of vitality.

Mortality cannot, however, be attributed only to inherent weakness. It is possible for adverse environmental conditions to have a bearing on vigor. Birds suffering from nutritional deficiencies may give way to exposure

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is to produce Meat. That flock of Turkeys is most profitable which matures quickly, develops uniformly and fleshes heavily. All three of these factors are of direct and essential benefit to the producer. Tweddle Government Approved Turkey Poults from Pullorum free stock are the kind that will do the above. We have the right market types in Broadbreasted Bronze, White Holland, Beltsville White, can supply them in Non-sexed, Sexed Hens, or Sexed Toms at reasonable prices. Before buying send for catalog and Turkey Guide.

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Thousands of Poultrymen

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in supply, what happens? Prices go up. Sales of Baby Chicks across Canada are down 40% or more. This will create a serious shortage of eggs and poultry meat this Summer and Fall. The result—prices are bound to be high, and with all prospects pointing to lower feed prices in the Fall, this should make it very profitable for those who buy their usual number of chicks early. If you want to make it extra profitable insist on Tweddle R.O.P. Sired Chicks. Send for new 1950 catalog giving full details of the advantages of R.O.P. Sired Chicks. Started Chicks. Older Pullets. Turkey Poults.

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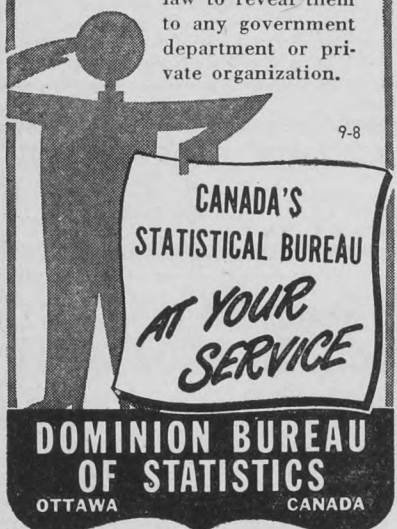
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9-8

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whereas the same birds on an adequate diet would suffer no serious ill effects.

There are many causes of poultry mortality and it is often hard to trace their exact cause, says W. F. Mountain, Head Poultryman at the Harrow Station. Disease is probably one of the most important causes of loss, particularly among laying pullets, and these frequently arise through oversight. Housing young and old birds together, bringing new birds in without a suitable period of isolation, and allowing persons or materials that have been in other flocks to enter the poultry houses or runs, will frequently lead to trouble. The prompt removal of birds that show signs of sickness is also a wise precaution. A daily inspection of the flock will serve to help in locating birds that are off color.

Cleanliness of the eating and drinking utensils as well as the wholesomeness of food and drink are obvious necessities for good health. Green feed, in the form of good quality hay at which the hens can pick, is recommended as a protection against loss.

It is almost impossible to trace any loss exclusively to either heredity or environment. For this reason it is a wise precaution to secure birds from good stock and use good management methods that give the birds opportunity to express their inherent vitality.

Buy Chicks Early

It is important to get plenty of eggs per hen, but it is almost equally important to get the eggs at the right time of year. It has been pointed out by W. P. Mortenson, farm economist at the University of Wisconsin, that in 1948 the average price paid for Grade A Large eggs in that area was 46 cents a dozen. For September, October and November the average price was 52, 59 and 59 cents respectively.

The only way to hit this market is to buy chicks at the right time. In the view of this economist, more money is lost through buying chicks too late than is ever lost through buying them too early. It is not only that there will be eggs for a higher price market if chicks are bought early, but also the eggs will be larger and so will command a better price. If a producer's brooders are dependable, the extra cost of brooding early chicks is likely to be offset by the premiums large eggs will bring in the fall months.

Poultry House Ventilation

REGARDLESS of how cold it is outside, a movement of air through the poultry house should continue. If the house is to stay dry, air must come in from the outside, pick up moisture and again be forced out. The amount will have to vary with the outside temperature, as it is not desirable to let the house cool down too much.

The most popular ventilation system consists of air intakes in the front or south side of the building, constructed so that the air is forced to the ceiling when it comes in. The air circulates gradually down toward the floor. An air outlet is built up from the floor and runs out through the ceiling, and the air that settles is forced out through this passage. This outlet has only one opening. It is located at the back or north side of the shaft, and can be closed by means of a sliding door which permits control of the flow of air. The size of the

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HOW TO KEEP CHICKS ALIVE AND HEALTHY

Every year countless chicks die because of faulty management. Many others manage to stay alive but they will never, because of poor health, be profit makers for their owners. Successful poultry farming demands the type of good management outlined below. Check to see if a neglect of any basic rule is costing you money.



1 BROODER HOUSE — Unless the brooder house is new, it should be thoroughly cleaned and disinfected before chicks move in . . . preferably a month before to allow for complete drying. Wash down (preferably with a pressure hose) and use a strong hot lye solution and stiff push brush to remove caked material. Disinfect when dry. All equipment should be thoroughly cleaned and disinfected.



2 FEEDING — Chicks should be fed before they are 36 hours old. Allow each chick one inch of hopper space for the first five weeks, and then allow two inches. Until chicks are six to eight weeks old, feed Miracle Chick Starter. A perfectly balanced and scientifically tested feed, Miracle Chick Starter contains all the elements needed — proteins, carbohydrates, fats, vitamins and minerals — to bring your chicks through the dangerous early stage in good health and vigour. Feed chicks amply enough so that they will not eat the litter. Also see that they have plenty of fresh water, lukewarm for the first five days, and sprinkle grit on top of Miracle Chick Starter three times a week.



3 CHANGING LITTER — Change litter when too dirty or damp. Disinfect when necessary. Try to keep litter absolutely dry by turning every day and stirring thoroughly with a fork.



4 BROODER TEMPERATURE — Chicks are ruined by too much heat and also by too little. The brooder temperature (95° under brooder is usual) should be accurately adjusted according to climatic and brooder house conditions before they move in. After the first week, reduce the brooder temperature about 1° a day until chicks are seven to eight weeks old when the brooder should no longer be needed.



5 VENTILATION — Chicks need plenty of fresh, pure air. Brooder houses should be adequately ventilated and the ventilation should be gradually increased to acclimatize birds to natural weather conditions. A foot-high guard around the hover will protect chicks from draughts.



6 SELECTION OF LITTER — No litter is perfect, but tests have shown that litters made from either wood shavings, peat moss or straw, are more satisfactory than some other types. A deep layer with good absorptive power is necessary. To ensure cleanliness, litter can be covered with newspaper for first few days, and top sheet of paper removed once daily or oftener.



7 6 TO 8 WEEKS — When chicks are six to eight weeks old, keep building a profit-making flock by gradually mixing in Miracle Growing Mash until this is the complete diet. Miracle Growing Mash is specially compounded to supply all the needs of pullets . . . to mature them earlier and get them into production around five months. Pullets also develop a sturdy frame capable of withstanding heavy laying.



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shaft depends on the size of the house but should be at least 18 inches square. If the shaft is not insulated from the ceiling to the top of the shaft, it is likely to frost inside and obstruct the air movement. If a cap is put over the ventilator shaft it should have a flat lower surface, to permit the ready escape of air.

If this system is used, E. E. Kitchen, Poultry Fieldman, Alberta Department of Agriculture, advises the checking of several points. It is important that the cold air should be forced upwards instead of being allowed to drop as it comes inside; the outlet must be free from obstructing dirt or frost; the top must be open; and the shaft itself must be free from cracks so that it does not leak air. Wire mesh put at the top of the shaft gathers frost and impairs the efficiency of the ventilating system. The most serious mistake is closing off the air entirely. This will warm the house for a while but it will make the house damp and it will be colder in the end.

Mating Geese

ONE problem with which the producer of geese has to contend is the fact that the birds are typically faithful to the mate of their choice. A gander and a goose generally pair up for life, and polygamy, if it is to exist, is likely to be the result of careful attention on the part of the person raising the birds. If one male can be induced to mate with two or three females, the arrangement can be continued for the life of the birds.

A number of points must be kept in mind. If a new female is introduced into a pen where the goose and gander have already mated, the acceptance of the new bird is unlikely. The procedure should be to observe the birds carefully after the geese are put with the gander. Careful observation as to the attentiveness of the male to the females is the best indication as to whether pairing has taken place.

As a check the male can be left with one female, and if the male makes a fuss and calls the missing female, the absent female is likely the mate. As a further check the eggs can be observed for hatching fertility after they have been incubated for six or seven days. If a number of them are clear the indication is that one of the females has not mated, and an attempt must be made to find another mate for the neglected goose.

Substitutes For Eggs

PERIODICALLY the claim is made that some product has been developed that will serve as a substitute or a supplement for eggs. A number of such substitutes were brought forward during the war, and during recent years have been subjected to rigorous tests.

The reasons for the use of eggs in baking and cooking is a result largely of the contributions made to flavor, color, texture and food value; the stabilization of emulsions and foams; and the value provided for coating, clarifying, binding and thickening. It is the colloidal nature of the egg that has defied imitation. Also, the fact that egg proteins coagulate with heat, makes them of special value in cooking or baking.

During the war, substitutes known as Milei W and Milei G, prepared

from non-fat, dry, milk solids, were used in Germany in place of egg white and egg yolk respectively. Compared with Canadian eggs and egg products in baking studies, these substitutes were found to be quite inferior.

Substitutes for egg albumen as a whipping or foaming agent were made from soybeans. In spite of much to recommended them, they failed to coagulate with heat and so would not hold water as firmly as albumen. This leads to unsatisfactory results, especially in light foams of high moisture content. Another egg white substitute, made from fresh and dried codfish, or steam-dried shrimp, was reputed to have superior whipping qualities. It was found to retain a slight fishy taste, and so was not satisfactory.

Egg substitutes still fall short of the real thing even for cooking, and it is impossible to conceive of anything taking the place of eggs on Canadian breakfast tables.

Cross-Bred Chickens

THERE has been a trend in the last year or two to the use of crossed birds. One of the most popular crosses is the Leghorn (male) x New Hampshire (female). No doubt the chicken man has been trying to find a bird with the early maturity, non-broodiness and productivity of the Leghorn and the sturdy body and quiet nature of the New Hampshire.

Last spring we purchased 500 crossed day-old pullets. They ate like horses and grew like the feed bills. At three weeks they looked like five-week chickens, at five weeks they looked like eight weeks and at four months they looked like veteran layers. At this stage we did everything we could to hold them back—kept them on the range and on pullet mash, but lay they would. At four and one-half months they were laying 30 per cent, at five and one-half months they were laying 80 per cent.

It was wonderful to get all those eggs while the price was high, but they could not stand the strain. In spite of increasing the grain ration and cutting down on the laying mash, some developed paralysis, others got thin and several died.

We had gone out of S.C. White Leghorns in the first place because of the high mortality rate and their nervous disposition. Now we seemed to be faced with the same thing again—burying three or four hens a week, and the whole flock hitting the ceiling every time anyone made a sudden movement. True, these birds did have bigger bodies and thicker legs than the pure Leghorn, but most of them were white and the Leghorn strain seemed to show up more strongly than the New Hampshire.

The male strain seems to be stronger than the female. The hatcheryman probably has his reasons for using the Leghorn sire, but some years ago we hatched 200 chicks from eggs produced on the place from Leghorn hens and New Hampshire roosters. They were good hens and their production was so steady one always knew how many eggs there would be before they were gathered.

Speaking from our own experience we have found the Leghorn x New Hampshire crosses disappointing and will probably go back to New Hampshire this year.—Addis Mill.

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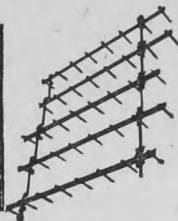
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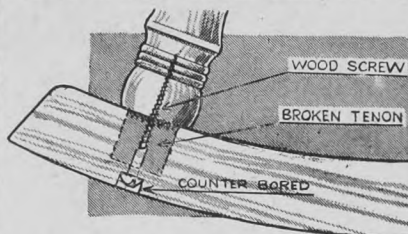
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Workshop In March

Get odd jobs done before the pressure of spring work

Repairing Broken Furniture

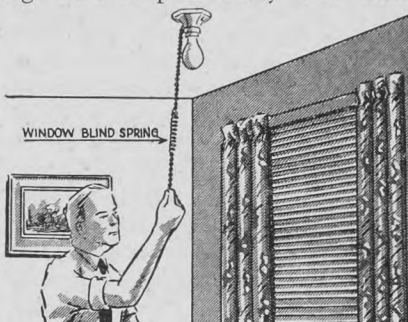
This kink is often handy in repairing furniture since many breaks are due to broken tenons. First drill an



under-size hole through the broken arm or rocker, the tenon and the leg or rung. Also counter-bore the hole so the head of the screw will be flush or preferably counter-sunk. If the head of the screw is in a position where it will show, cover it with a wooden dowel or plug or fill in over it with plastic wood.—H.E.F.

Spring In Switch Cord

Electric pull-type switches and sockets are often ruined by heavy jerking. This is particularly true when



children are pulling the cord. To prevent this damage and the nuisance of replacing the cords, take a light coil spring from a curtain roller and tie it in as part of the cord. These springs have about the right tension to take up the shock when the light is to be switched on or off.—P.W.A.

Mail Box Flag

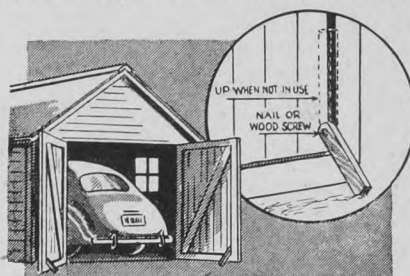
The flag is simply to show when the mail man has gone by and left something in the mail box. It saves us a lot



of time because the box is half a mile from the house. I took an old mower knife and removed the sections leaving on the head for a weight. The arm is about three feet long, fastened at the centre to the side of the box and tied down with a string and hook at the light end. When the mail carrier leaves something for us he slips the hook out from under the box, allowing the pail to go up and give us the signal.—A.W.G.

Door Stopper

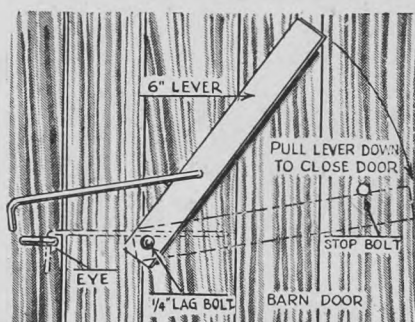
Every farm has at least one door that is continually a nuisance by blowing shut. Here is a sure-fire way to hold it open and it is much better than strings, wires or hooks. Nail a 12-inch length of board (about one by two inches) to the door so that it will hang down at a slant to the ground. An extra piece of two by two-inch



material may have to be added to doors with light frames, to provide a base for the stopper. When not in use the stopper is swung up out of the way.—R.E.A.

Sliding Door Closer

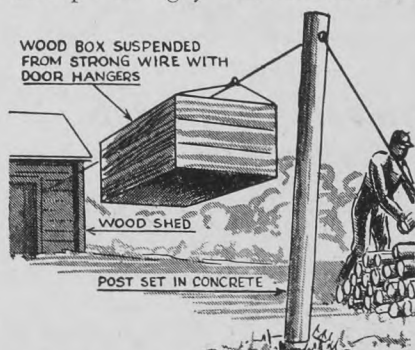
The last inch or two is often the toughest in closing sliding doors. Make a lever out of a six-inch piece of strap iron by drilling a quarter-inch hole at one end and another about two inches up from it. Fasten it to the door with a bolt or lag screw and put a light-rod



hook in the centre hole. To snug the door up tight, drop the hook in the eye on the door jam, then pull down the handle of the lever and fasten it under the head of the stop bolt. For heavy doors a longer lever should be used, giving additional leverage.—W.K.R.

Wood Carrier

We like to saw our wood at a pile quite a distance from the house but found an easy way to move it into the wood shed at the back door. Dig a hole at the wood pile and set a post in it, filling the hole with cement. Brace the top with a guy wire and run a steel



rope or cable from the top of the post to the top of the wood shed door. Fasten a large box to the cable with rolling door hangers. The box can then be filled with wood, pushed down to the shed and emptied with little effort.—W.R.



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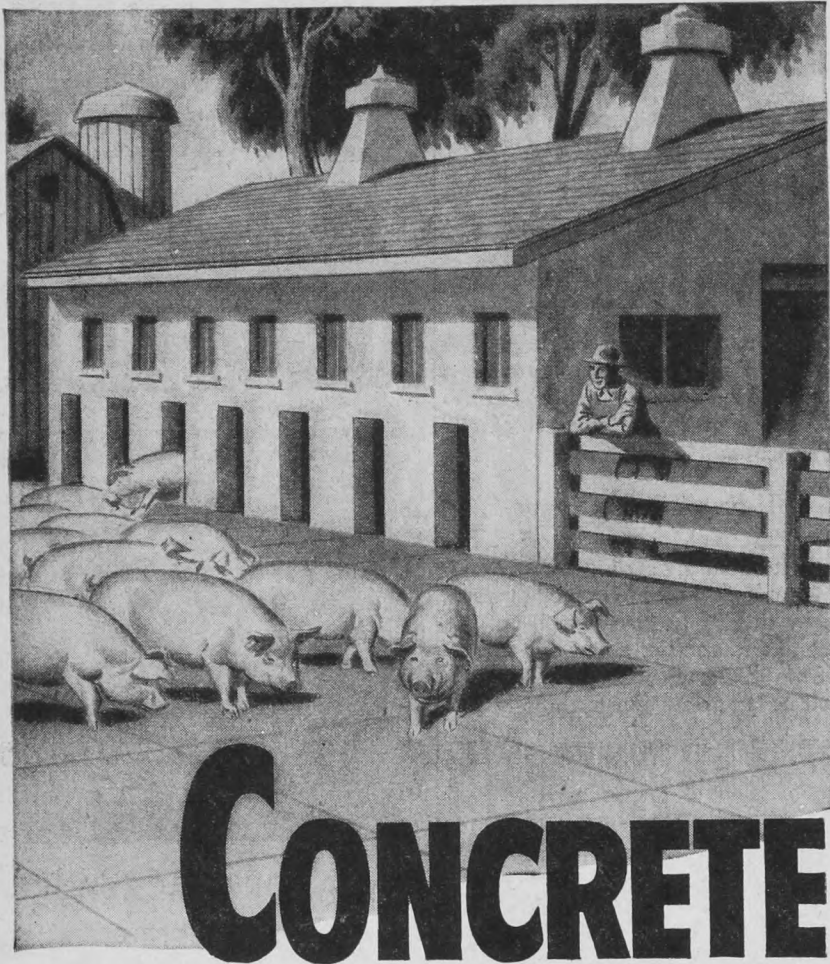
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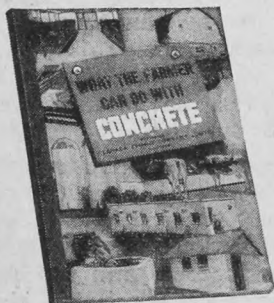
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**Dead-End Looms Up**

A "DEAD-ENDER" is a person who spends a good many years going to school to get an education and then goes and gets stuck in a job that has no future in it.

Most students when they leave school seem to get along in life and they keep on getting along. Others run into that dismal dead-end.

What does it? A recent examination of over 2,000 high school graduates who seemed to be making little or no progress in the business world showed that nearly all of them had followed the same pattern when at school.

For one thing, they had done inferior reading. They browsed around in too much cheap fiction, and shunned good travel and science books.

Again, their popular radio programs were sub-standard. They listened solely to the cheap comedy and the boogy-woogy offerings. News commentators and high class music programs were given the cold shoulder.

As for the movies, practically all the "dead-enders" admitted they took in the shows as they came along, regardless of the type of program. No effort was made to follow picture ratings given by the experts, to attend only family approved shows, or those of Academy Award standards.

And finally, even the recreational activities of the "dead-enders" were proven to be off the beam. Less than one-third of them played games such as tennis that could be carried on throughout life. Even when in the stimulating teens the students who were going to be stymied later in life were setting up their own handicaps by not using their leisure time to the best advantage.—Walter King.

Early Club Beginnings

IT will soon be 30 years since club work in Canada had its small beginnings. Many of the members who today are rapidly becoming leaders are not too well informed as to the history of its development. In fact, a recent publication on which a story in these columns was based, gave information that later findings proved to be not altogether reliable.

The story traces back to 1924. It was in that year that the Canadian National Railways instituted an inter-provincial competition at the Royal Winter Fair in Toronto, open to swine club teams organized under the Dominion-Provincial policy in districts in the Prairie Provinces. Teams were selected from clubs adjacent to the railway lines. The following year the competition was enlarged

to include teams from each of the Canadian National territories in eastern Canada. During the period from 1924 to 1930 a total of 41 teams were taken to the "Royal" show as guests of the railway. The contests were organized and conducted under the Canadian National's auspices. In 1928 a similar competition was set up for calf club teams, and in the three years following 16 teams from these clubs were taken to Toronto.

During this period from 1924 to 1930 the Canadian Pacific Railway also encouraged Dominion-Provincial swine club work by giving winning teams from clubs adjacent to their lines an opportunity to attend the Royal. A total of 19 teams were guests of the Canadian Pacific during this time.

The Canadian Council on Boys' and Girls' Club Work came into being as a result of the interest resulting from these trips. A meeting was called by the late Hon. Robert Weir, then Dominion Minister of Agriculture, and delegates from every province attended, and organized the Council. In 1933 the Council was incorporated as a non-profit-making organization. The fundamental purpose of the Council was, and still is, to maintain a national policy on boys' and girls' club work and to provide a medium through which interested organizations could lend support to the movement.

Since that time governments and interested organizations have co-operated in conducting the program of the Council. With their support and guidance club memberships in Canada have increased from 18,000 in 1930 to about 50,000 at the present time. The end is by no means in sight.

Tractor Clubs In Canada

TRACTOR clubs are a very popular part of 4-H programs in the United States. Similar clubs were organized in Ontario last year. George Bryce, Agricultural Engineer with the Extension Service, Manitoba Department of Agriculture, expects that a number of such clubs will be in operation in Manitoba by the summer of 1950.

Members of these tractor clubs will be instructed in maintenance, lubrication and care of tractors. They will also keep records of costs of tractors being used on the farm. It is also expected that a feature of the club program will be driving competitions. The individual clubs will sponsor such competitions and skillful handling of tractors will be emphasized.

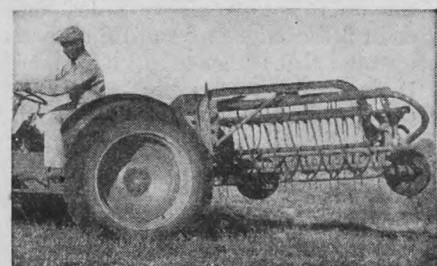


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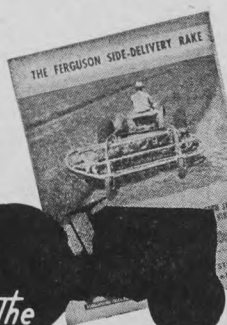
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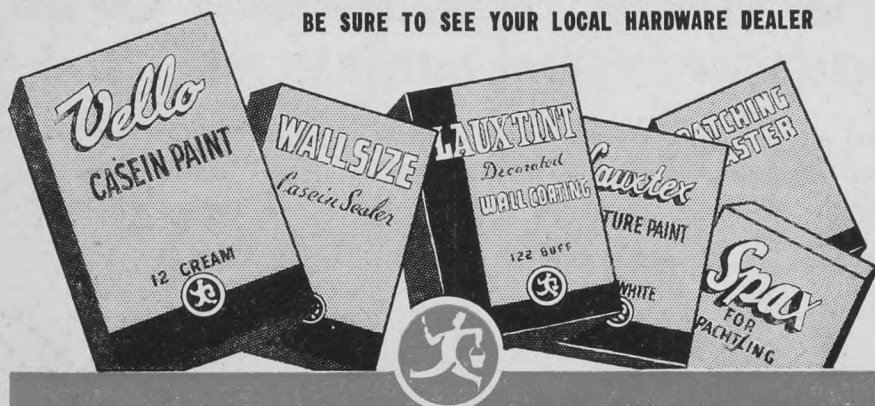
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Tractor Accidents

Many of the serious tractor accidents that we hear about each year could be avoided if operators would exercise real care

by C. B. HARROP

FROM time to time we read in the newspapers of farmers being seriously hurt or killed while operating their tractors. This seems to be a needless loss of life because tractors are relatively slow moving machines that are not involved in heavy traffic such as motor cars. Sometimes the accidents are caused by failure of a mechanical feature of the tractor but often they can be traced to carelessness on the part of the operator. The following is an outline of some of the points which the tractor operator should remember in order to avoid unnecessary accidents.

The row-crop type of tractor is the easiest type of tractor to tip over and is, therefore, the cause of many accidents. In order for these tractors to do the job for which they are designed, they have to be built with greater ground clearance and narrow front wheels. Accordingly the stability of the tractor is reduced. Since these are features of the tractor which cannot be changed, the prevention of accidents must be approached from a different angle. When the farmer is buying a row-crop tractor, he should remember that although he is getting greater maneuverability, he is also buying the type of tractor that is the easiest to tip over.

To the farmer who buys a row-crop type tractor there are a few precautions that can be taken. The rear wheels should be kept at the widest spacing that the farmer finds practical. In some cases it might not be as convenient to have the wheels in the wide position but in the interests of his own safety, the farmer should keep the wheels at a wide spacing. Wheel weights, as well as giving added traction, are a precaution against tipping too. Calcium chloride in the rear tires is another means of adding stability to the tractor. Making sharp turns on hills or in ditches is one of the easiest ways to tip a tractor and should only be done with extreme caution.

THE power take-off connection between the tractor and the implement it is being used on is the cause of many accidents. A shield for this connection is always supplied by the

implement manufacturer and often there is a "Caution" sign on it warning the operator to always put it on when the P.T.O. is in use. However, the operator in his haste often neglects to put the shield on, thus leaving the knuckles free to catch on someone's clothing. During the past couple of years there has been a trend on the part of manufacturers to make the shield a part of the P.T.O. connection. In this way the shield is always on the connection and nothing is left to chance. This is really the only satisfactory way to eliminate this hazard.

The hand clutch is a feature on some tractors which lends itself to accidents. There are many who will disagree with this opinion but often they are confusing the fact that they are handy with whether or not they are safe. The exponents of hand clutches usually like to point out the ease with which they can hook up a trailing implement. It must be admitted though that the operator is in an exceedingly dangerous position when he is bending over behind a tractor and controlling its movement toward himself, while at the same time he is adjusting the hitch to the proper height. Slippery ground or the slightest confusion on the part of the operator can spell disaster. For this reason it is much safer for the operator to block or jack the hitch to the proper height and then get on the tractor and back it into position.

Levers and adjusting cranks on trailing implements are another source of accidents to tractor operators. Due to the variation which has existed up to the present in the relative positions of tractor seats and drawbars, it has been impossible to design a machine with the levers and controls in the right position for all types of tractors without making them adjustable. Many of these levers and controls are adjustable but it is up to the tractor operator to adjust them to the right position for his particular make of tractor. It is good policy to keep the controls far enough behind the tractor operator that he has to reach for them. If they are kept too close to the seat they may strike the operator in the back when he is making a turn.



An apparently harmless machine can be a hazard if improperly handled.

ANOTHER cause of a similar type of accident is a swinging drawbar. It is common knowledge that with certain types of tillage implements it is easier to steer the tractor if the tractor swinging drawbar is permitted to take up its position from its forward fulcrum and left free to swing about this point at all times. But this method of hitching entails a hazard not always recognized, particularly when operating on a hilly section. If, for example, it becomes necessary to change gears going up a grade and for some reason the operator has difficulty getting into a lower gear, the tractor may roll back. The free swinging drawbar would then jackknife and the operator could be pinned very easily between the steering wheel and part of the trailing machine. It is, therefore, well to remember that although a swinging drawbar that is not pinned does not present a hazard on level fields, it does on hilly operations. It is also dangerous for anyone to ride on a tractor drawbar, particularly if the swinging drawbar is not pinned.

Besides those mentioned above there are several other less important causes of accidents. Cranking a tractor is always dangerous. However, most of the tractors being sold today are equipped with electric starters and, therefore, this type of accident is constantly diminishing. Accidents sometimes occur when the tractor is travelling at high speed and the operator pushes on only one of the wheel brakes causing the tractor to make a short turn which usually tips it over. Most of the tractors are equipped with a device for locking the two wheel brakes together but it is very easy to forget to use this. Probably the safest way to overcome this problem is for the operator to make it a habit to put his foot on both brake pedals at once when not using the brakes to make a turn.

REGARDLESS of the number of safety features designed into tractors and farm implements, it is up to the operator to use his tractor and equipment carefully. It is unfortunate that due to the shortage of help the farmers have been forced to let their children drive the tractor before they are old enough. Often they are only seven or eight years old and as a result accidents are certain to occur. A safety campaign carried on by the Junior Farm Organizations would be an ideal way of promoting safety among tractor operators. They could make safety the theme for one meeting each year. At this meeting they might discuss the accidents that have occurred and how they might have been avoided. They could also give a demonstration of the proper way to hook up a P.T.O. or hitch a tractor to a trailing implement. In this way it would be possible to make the power farmers of tomorrow "Safety Conscious" operators.

Accidents on farms in Canada were responsible for 450 deaths in the four years 1944-47 inclusive. Thirteen people died in Manitoba in 1949 as a result of tractor accidents. It is an unhappy thought that a large proportion of these accidents were unnecessary. The Guide recommends this very pertinent article prepared by Mr. Harrop, an official of the International Harvester Company, to its readers.

Farm Service Facts

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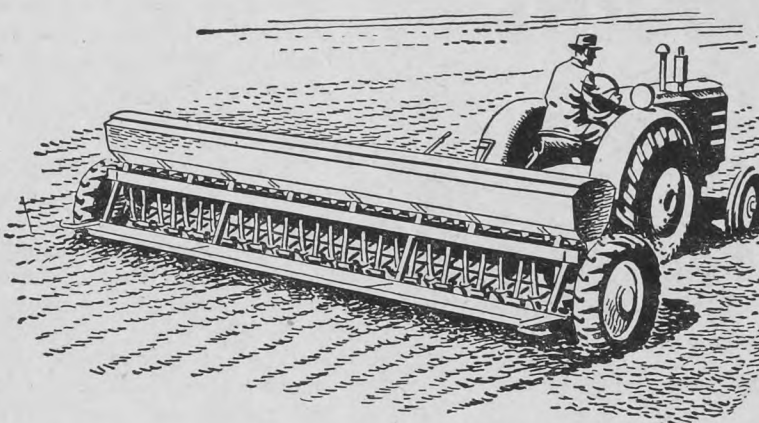
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HOW TO MAKE FARM MACHINERY READY FOR TROUBLE-FREE SPRING WORK

Preparation of machinery in advance of spring operations is the best insurance against troublesome breakdowns, difficult operation, poor tillage and loss of valuable time which may reduce yields and profits. Cleaning and thorough lubrication of all moving parts with suitable oils and grease will pay off in reduced draft with consequent fuel saving and in less wear with fewer breakages. When cleaning, it is important to remove all old grease before applying new lubricant.

How to Get Quality Work From Your One-Way Disc

The condition of the one-way disc depends upon the wear of the disc blades, the gang and wheel bearings and the power lift and its linkage. If the discs were not cutting cleanly when operating at shallow depth at the end of last season, they require sharpening. As an even grind at the correct bevel is necessary, it will be more satisfactory to have the sharpening done at a machine shop than to do it yourself.



The demand is for bigger and bigger machines because they get the seed in the ground sooner... give the crop more days of growth. For the same reason, it pays to put all tillage and seeding implements in tip-top working order before the rush commences. Field delays usually reduce crop yields.

Slack in the gang bearings may be located by using a lever and block to pry up under the disc gang. Where the slack is considerable the shells or bearings should be replaced. Dirt seals and oil felts should be replaced to get as dust-free operation as possible.

Dirt and grit entering the bearing on the vertical shaft of the front axle, may cause rapid wear which would mean costly delay during crucial spring operation. The life of this part can be lengthened by placing a good canvas or plastic sock over the top of the shaft to prevent dust from entering.

How to Make the Grain Drill Ready for Spring

When checking over the grain drill, clean out the bottom of the grain box, remove dirt and scale from fluted cylinders... grease the drill... see that discs, frame, hitch and working parts are not broken or excessively worn... make sure the spouts are securely attached to the feed shells and so adjusted that seed will be

delivered into the bottom of the furrows at uniform depth. It pays to give special attention to the feed rolls. Remove the chain drive and turn the shaft with a wrench. If it is very stiff, add penetrating oil to the shaft bearings and work the wrench back and forth until the shaft rotates properly.

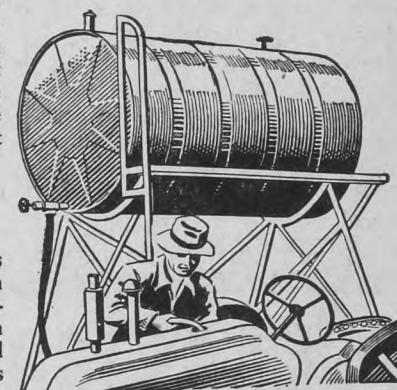
To ensure even depth of seeding, disc bearings should be checked and worn ones replaced so the discs run smoothly with no wobble. On double disc drills, it is very important that the discs form a closed "V" at the front. Adjust the inside and outside scrapers to clean the discs without preventing them from turning.

Checking the Power Lift

A number of implements these days are equipped with power lift which may be either the open or the enclosed oil bath type. For smooth operation, all parts must be cleaned and examined for wear. If there is excessive wear between the dog clutch housing and axle, the housing

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NEXT ISSUE



HOW TO CHOOSE TRACTOR FUEL

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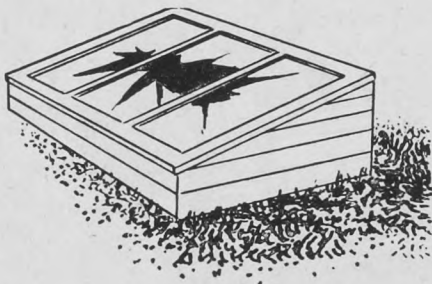
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Assiniboiné Indians make a pilgrimage to Roche Percee. The author is at the extreme right.

The Legend of In-yan- ogh-nok

by OCHANKUGA'HE

Hee-pen hands down an Indian tale about La Roche Percee, the great mass of rock on the Saskatchewan prairie about which both red men and white have speculated. But first, meet Hee-pen

DICE was a popular pastime with the Plains Indians before the white man introduced them to this country in a modern form. Only our dice were made of lynx claws, wild plum pits, and brass discs about the size of nickels. Sometimes our elders let us youngsters play with them. It was of a winter evening that Wanita, son of Chief Cuwikna Kaeyaku, and I were whiling away the time at this absorbing game, when the door was thrust open and a squawking fowl flung fluttering into the room.

Instinctively we made a dash for the dark recesses behind the chimney of the open fireplace and sat there huddled, peering at the door, when in walked the man of all men we least expected to see and most dreaded to meet.

"Take back your chicken and give back my cat. I want to eat it!" he demanded.

The speaker was none other than Hee-pen, "The Wasp," dean of medicine men, who, it was whispered in the lodges, was guilty of the illicit practice of voodooism. Seemingly unaware of our presence he stalked in and leisurely sat down, blocking our only avenue of escape.

Sometime later, I learned that he had unwittingly victimized himself by trading his cat for one of the chief's chickens. He wanted some of the delectable eggs on which the chief was faring, so he parted with his cat in exchange for a bird. It appears that the chief bade him pick whichever one he wanted from the flock. Hee-pen picked the bird with the loveliest plumage. For two weeks he shared his hut with it, but never an egg did the bird lay. All he got was noise, the eternal crowing of a rooster.

In due course the chief and his wife appeared and in spite of the provocation which prompted the visit, all the social amenities in keeping with traditional hospitality was cordially extended to the visitor. The chief's wife placed food before the medicine

man, after which the common pipe was passed and re-passed between the two men. Through its mellowing influence their difference was settled and tale after tale told. One of these stands out vividly in my memory. It is the legend of the historic shrine of the Plains Indians, In-yan-ogh-nok, the Roche Percee of the white man.

The old wizard, Hee-pen, had a mischievous glitter lurking in his eyes as he covertly watched us youngsters staring at him from the chimney's shadows, but we soon forgot our predicament and became absorbed in his stories, one of which I will set down as he told it.

ON one of our periodic trading trips to the Hudson's Bay Co. post at Manka-ska Oyuze (southeast of the present site of the town of McLean), my father and I camped overnight among the Winca-Paghen, where our present reserve is situated (near Montmartre). That night my father was in a reminiscent mood and he told me the tragic story of the famine which overtook Chief Tokahe Inuwan's tribe, which had wintered here among these hills.

An unseasonal thaw and rain during the Long Day Moon (February), fol-



A group of Assiniboinés in front of the rock.

lowed by a sudden cold wave from Kee-wayteen's icy breath, had turned the countryside into a glacial field. The buffalo and all the big game vanished from this barren, ice-locked land, leaving Chief Tokahe Inuwan's tribe to face starvation in the dead of winter. The tribesmen with their families fled in all directions, leaving only the chief's lodge standing.

HORSES were unknown in those days. Wolf-like dogs capable of carrying fifty pounds of portables were the only beasts of burden. The chief and his childless wife had six dogs to transport their belongings. As they travelled southward, they had to eat one and then another of their dogs before reaching the Souris river just south of the present site of Estevan. As night fell, to their relief, they found themselves walking on soft, powdered snow.

Bright and early the next morning the chief was out scouting for signs of game. He crawled up a knoll and from this vantage point kept a sharp lookout. His vigil was soon rewarded. In the distance he saw two buffalo approaching and disappear in the valley. He sneaked back to the valley and hid in one of the nearby bushes. Luck was with him. The buffalo walked right into the ambush and he was able to shoot one.

Tokahe Inuwan and his wife worked feverishly all through the day and before night fell they had all the meat stored safely in their teepee. After dark, when they were enjoying their well-earned rest, one of the dogs warned them of a presence outside.

"Look out and see what the dogs are growling at," the chief asked his wife.

"There is someone standing outside," she said in an undertone.

"How, how! Come inside," the chief invited. "We have lots of meat."

But when the visitor entered, it was more than they had bargained for. It was a living skeleton, a spectre! When the chief recovered sufficiently from the shock, he managed to ask, "Are you a human being?" To which the apparition nodded affirmatively.

Human or supernatural, one thing was obvious, it was a female. The chief crossed the hearth and sat down beside the haggard creature. He started to feed her rich, warm broth with a horn spoon. The first few spoonfuls went gurgling uncertainly down her throat, but after a while she was able to swallow normally.

That night the chief's wife whispered into his ear, "Let us break camp and leave this thing. You have been handling something which is not of this earth. You have tainted your hands with the mystic shadow of death."

In his soul the chief was sore troubled. Should he listen to his wife and to his own superstitious fears? Should he abandon this helpless guest to her fate, or should his nobler nature prevail?

Morning saw them on their way, moving as swiftly as the weight of their new riches and their diminished transport would allow. But they might have saved themselves their trouble, because just as they were comfortably settled in their new camp their tent flap opened and the unwelcome guest walked in and sat down.

From that day she gained in strength and health, responding well to the loving care that the conscious

stricken couple lavished upon her. One day the chief bathed her face, combed and braided her hair, applied red ochre make-up to her face, and bade her tell her story.

"I saw you the morning you showed yourself on the top of the hill," she said. "Our camp was on the other side of that hill in a sheltered nook of the valley. Our family fled from the angry elements when Winca-Paghen became uninhabitable. After we arrived here my father left every morning early in search of game but returned empty-handed each night, until hunger and exhaustion claimed him. My mother and my elder sister followed him. I was the last to share their fate, but on my way to the spirit land I was intercepted by a spirit which said to me, 'I am the presiding Manitou of In-yan-ogh-nok. Return to earth and henceforth you shall be the handmaiden of my decrees.'"

"When I woke up and ventured out I saw you. I did not want to show myself until dark, lest I frighten you. I shall be a mate to your wife, but when danger lurks in the camp, or on the warpath, I shall forsake your lodge and live apart." Thus she concluded her amazing revelation.

From that day Chief Tokahe Inuwan seemed to possess a charmed life, distinguishing himself in all the tribal wars. He became a hero and one of the greatest chiefs of the Assiniboines. Since then In-yan-ogh-nok became the shrine of the Assiniboines.

Elephant Methuselahs?

Close study does not support widespread belief

THE elephant which recently went some way up the Eiffel Tower (in a lift) was reported from Paris to be 187 years old. Now, elephants have a reputation for being long-lived animals, and allegedly centenarian specimens seem to be commonplace, but there are good reasons for thinking that their old ages are fabulous in more than one sense of that word.

Major Flower, the expert on the longevity of animals, was discussing the ages of famous old elephants the evening before he died. Here are some of his observations.

Jumbo, the famous beast whose name has become a synonym for elephant, was often described as having "carried generations of London children," and he was believed to be very old when he died. But he was about four years old when he came from Paris in 1865. He left London for New York in 1882, and was killed in a railway accident in Canada, at a probable age of 24 years. Another beast, Alice, reported to be 157 years of age at death, was actually 35. Elephantine myths are evidently apt to grow at mushroom speed. In fact, there is no proven instance of any elephant, Indian or African, having lived to be 70 years of age, anywhere, at any time.

What the truth may be about other reputedly long-lived creatures (turtles, tortoises, carp and eagles, for example) one can only guess. There are obvious difficulties about proving the ages of animals whose births were not recorded. The ancient Greeks had a witticism on the subject. A skeptical peasant, having been told that parrots lived to the age of 100 years, bought one in order to test the truth of the statement.—J. D. U. Ward.



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MONTHLY

Wheat Board Annual Report

Some additional payment by the Canadian Wheat Board, but a decidedly small one, is in prospect when final payment is made on the five-year wheat pool, which closes on December 31, this year. That is indicated by the Annual Report of the Wheat Board for the crop year 1948-49, just published.

As at July 31, 1949, the Wheat Board had a deficit on the 1945-49 pool account amounting to \$5,235,621. That was after the 1949 distribution of \$213,445,542, to bring up to the basis of \$1.75 per bushel, initial payments of wheat deliveries made up to March 31, 1949. That deficit was calculated after valuing stocks on hand, as at that date, on the basis of \$2 per bushel. Any additional distribution would have to come out of the marketed 1949 crop, from the difference between the initial payment basis of \$1.75 per bushel and the actual sales price received, which should average somewhat better than \$2 per bushel. The resulting margin, however, would have to be spread over the deliveries of five years, or close to 1,400,000,000 bushels. Presumably, the distribution to be expected would not be much more nor much less than five cents per bushel.

The Annual Report gives other interesting information. For example, the cost of adjusting payments amounted to \$1,494,018, which shows that it is somewhat expensive to make interim payments.

Class II wheat prices, for wheat exported to other countries than Great Britain, averaged \$2.43 in 1946-47. In 1947-48, the average Class II price was \$2.88, and in 1948-49, it was \$2.23. The lowest Class II price was \$2.05 per bushel and the highest \$3.45 per bushel. All told, during the three years beginning with August 1, 1946, 169,724,668 bushels of Class II wheat were sold at an average price of \$2.39 per bushel. During the same time, sales to the United Kingdom, at \$1.55, amounted to 339,573,484 bushels, and at \$2.00 per bushel, to 146,341,773 bushels. These quantities are slightly higher than stipulated in the Agreement, an addition having been made to cover loss of weight of milling by-products, when flour instead of wheat was taken by the United Kingdom.

During the same period, there were sold to the domestic market 38,470,997 bushels, at \$1.25 per bushel. That covered a period up to February 18, 1947, when the price was advanced to \$1.55 per bushel, at which the domestic market took 112,993,945 bushels. On August 1, 1948, the price was advanced to \$2 per bushel, of which sales were made of 52,685,187 bushels.

For four full years (including the crop year 1945-46) the Board's operating costs applicable to producers' wheat amounted to \$46,037,726, but the Board recovered \$30,796,156 of this amount mainly in carrying charges on wheat sold to Great Britain and to the domestic market.

Interest, paid directly by the Board in addition to that in carrying charges, was small. During the first three years of the pool, interest earned by the Board on surplus funds exceeded interest paid by the Board, while in 1948, interest paid exceeded interest earned by \$1,366,659. At the end of

the fourth year, net interest and bank charges had amounted to \$197,128. The small expense in this respect is due, of course, to the fact that, during the greater part of the period, the Board was retaining funds later paid to farmers. Before the Board commenced to make the adjusting payment in 1949, it had in bank deposits over 25 million dollars, and in Dominion of Canada Treasury notes, 40 million dollars. To complete the payment, it had to borrow from the banks, and its bank liability, as at July 31, 1949, was \$23,799,610.

The Board is still finding difficulty in getting money into the hands of producers, who have either not sent in certificates, or having delayed cashing cheques. At the date of the balance sheet, there were still outstanding certificates in respect to the 1944 and earlier crops amounting to \$1,829,765. In respect to the five-year pool, certificates were outstanding for the ten-cent adjustment payment in the amount of \$179,888, in respect to the first twenty-cent payment in the amount of \$2,316,539, and in respect to the second twenty-cent payment, to \$10,945,547. No doubt, since that date, the total of outstanding certificates has come down well below 15 million dollars. There must, however, be some millions of dollars due to producers, who have only to send their certificates in to the Wheat Board in order to get paid.

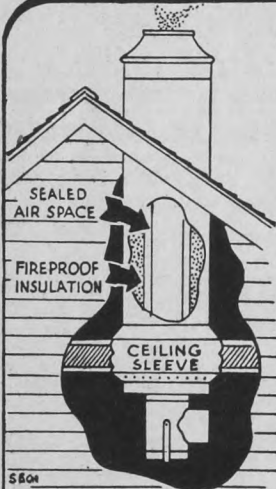
On account of the Government of Canada, the Wheat Board incurred a deficit of \$4,590,643 in handling the flax crop of 1947, and a deficit of \$3,806,855 in handling the flax crop of 1948. Of the 1948 crop, it acquired 13,308,000 bushels, of which, up to July 31, it had sold 2,929,572 bushels, and then had a carryover of 10,378,431 bushels.

Liverpool Wheat Market To Re-open

It is quite possible that had the Conservative party won the British election, a large change might have been made in government food buying, policies and practices. It was widely assumed in advance, that a Conservative Government would have got out of state trading as rapidly as possible and that, consequently, wheat buying would be restored to an open market. That, perhaps, was a large assumption, because it was not only socialistic theory which led the United Kingdom into bulk buying of wheat. Highly important was the existence of price regulation and the fact that the government was absorbing a good deal of the cost of bread, by selling wheat to millers at less than it cost to procure it. A new government might have found it impracticable to discontinue subsidizing food and difficult to devise another method of doing so.

However, the Labor victory at the polls does not mean that the government is going to continue bulk buying along the same lines as previously. In fact, an important Parliamentary Committee, including a majority of Labor supporters, recently recommended the reopening of the grain markets at Liverpool and London, as well as the reopening of the tea market. Such a step, if the recommendation should be carried out, would create some serious problems for Canada and the Cana-

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COMMENTARY

dian Wheat Board, in adjusting to new conditions.

It was not contemplated that the government should get out of the business of buying wheat and selling it to mills. Rather, it was contemplated that the government, instead of going abroad to buy wheat and to negotiate with agents of other governments, or traffic on the market at Chicago, should establish itself behind the Liverpool and London markets, and do its buying there, through trade channels on the basis of prices prevailing on the market from day to day.

Change to such a method, of course, would mean a greater use of the regular machinery of the British grain trade than is now made. That, however, does not appear to have been the principle argument made by those who advocated the proposed step. It was rather that reopening of the British grain markets would enable British merchants to re-establish their former position in the international grain trade and to buy wheat for re-export or resale to other countries. The committee, in making its report, declared that existing currency problems would put difficulties in the way of such a step. Nevertheless, in view of the advantage of regaining a prewar position in the international grain trade, it recommended prompt action.

Difficulties For Canada

Some obvious difficulties for Canada present themselves, if such a development takes place. It could, for example, be a disadvantage to Canada in having open market futures trading in progress, both in Liverpool and in Chicago, with no corresponding market available for Canadian wheat. Quite possibly, however, that consideration is of minor importance compared with some others. At present, for example, Canadian wheat is sold to buyers for Britain and for other countries, for delivery at Canadian ports, and for payment in Canadian or United States dollars. That is in contrast with the prewar method, under which Canadian wheat was sold for delivery in overseas ports, with freight charges paid, and with payment in sterling or in other non-dollar currencies. It would not be easy to operate on the former basis under present conditions, which affect both exchange rates and the supply of foreign exchange, and also under present conditions governing ocean freights.

The question arises as to who, if such a change were made, would assume exchange and freight risks.

Again, it might be difficult and dangerous to have to sell wheat on the basis of the Liverpool futures market, if the government of the United Kingdom were the principal, and at times perhaps the only substantial buyer there.

That might give opportunities for market manipulation disadvantageous to Canada. Again, a market such as suggested might give a comparative advantage to countries like Australia and Argentina, which presumably are able to sell in sterling, with a corresponding disadvantage to Canada.

No Competition From Millers

An entirely different situation, of course, would be presented if the proposal were to make the British grain

markets entirely open. That would be to allow other competitive buying between millers for wheat of different countries, on the basis of needs for competitive brands of flour. Under such conditions, in prewar days, there was a tendency for full recognition to be given to the comparative quality of Canadian wheat.

The committee, in making its recommendation, does not appear to have considered the possibility of difficulties arising in Great Britain making good on its obligations under the International Wheat Agreement. Actually, of course, such obligations do not arise unless wheat prices fall to the minimum levels stipulated in that agreement. Quite evidently, however, it was taken for granted that the government of the United Kingdom would not be undertaking any new commitments corresponding to those made under the four-year wheat contract with Canada.

Considering the nature of the election results, no one can predict how the Government of Great Britain may proceed in carrying out policies in effect, or recommendations made prior to the election.

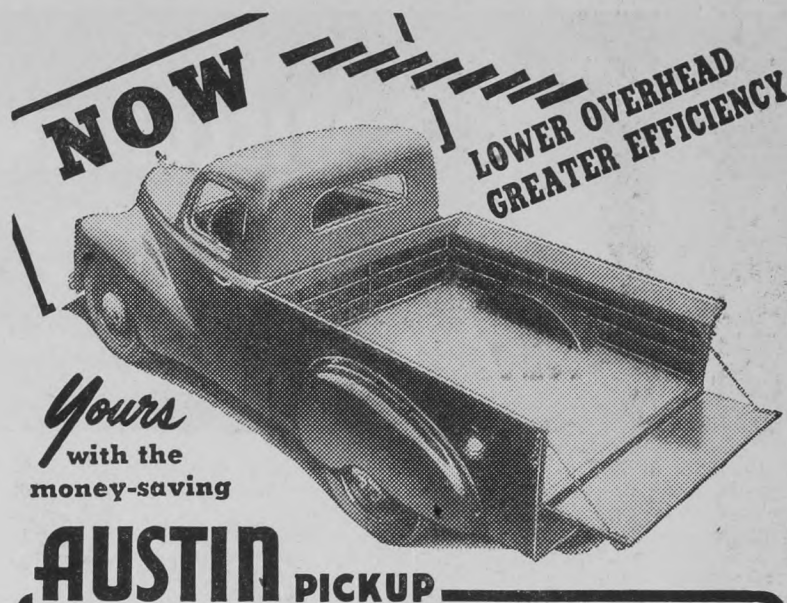
Vancouver Grain Shipments

Vancouver is doing a big business in grain export and the total quantity shipped through that port may reach 65 million bushels for the crop year.

From the standpoint of the Canadian Wheat Board and of the producer, it is desirable that as large a percentage as possible of the export surplus of Alberta should flow to market by the western instead of the eastern route, in order to take advantage of cheap rail transportation. From the standpoint of buyer overseas, it has, at times, been useful to ship such grain eastbound instead of westbound, because of more rapid transportation at times when grain supplies might be urgently needed overseas. When the question of timing is not so important, comparative costs are considered. Just now, it costs approximately 11 cents a bushel less to ship wheat from Vancouver to Liverpool than to ship it to the same destination from the Lakehead. Ocean freight rates have declined considerably during the past 18 months, and, in such a period, the long ocean voyage tends to increase any comparative advantage as against the short transport across the North Atlantic.

Supplies in store at Vancouver were, because of heavy shipments, rapidly depleted during January and February. To supply cargoes for ships on the way to Vancouver for loading, a fairly steady flow of grain from Alberta country elevators to Vancouver was required. For a time, the ability of the railways to keep up such a flow was seriously impaired by snow slides and other interruptions causing some loss of export business in wheat, oats and barley, for which some European export sales through Vancouver were in prospect.

The situation illustrates the fact that in order to keep up a steady flow of export business from Canada, a large supply of grain is necessary so that the pipelines of supply can be kept filled and grain constantly available for shipment through the ports where it is in demand.



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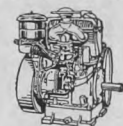
1. Tapered Roller Bearings take up all End Thrusts and Radial Loads (impossible with other types of bearings). You can mount your drive pulley, gear or sprocket directly on the extended crankshaft of any Wisconsin Engine without the need for an extra thrust bearing or outboard bearing.
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Sprinkler Irrigation

Continued from page 7

irrigation engineers are called in. On their O.K., the department grants a permit. Up to now over 4,000 such permits have been issued involving over 60,000 acres.

With his water right secured, the farmer applies to the P.F.R.A., who supply technical help to plan his project, and money to help defray the expense of equipping it. In some cases the financial assistance amounts to half the total cost. Farmers who have dugouts, or sloughs entirely on their own land do not have to apply for water rights but go straight to the P.F.R.A. If the dugout has still to be built, P.F.R.A. may take a hand in that also.

Let's take an imaginary trip out of Regina and see some of these sprinkling outfits at work.

TAKE a look at the farm of two Belgian brothers at Kronau, who operate under the name of M. and M. Deausy. These boys irrigate two tracts. A dugout on the building site provided enough water last year to put

plus labor, fuel and maintenance charges, than they would if they depended solely on rainfall. My guess is that it didn't do so this past year, but the Deausy boys would be the first to admit that there was a great deal about the technique of sprinkling which they did not know when they started out last spring. They are actually thinking in terms of enlarging their dam and thus increasing the irrigated acreage with no further equipment cost.

PERCY BARLOW'S farm at Griffin will in time provide a fairly accurate answer as to whether a prairie farm can afford to instal a sprinkling system for grain alone. Within the borders of his own farm he has a 35-acre slough which collects the runoff from an extensive area. At the time of my visit in mid-July it was still three feet deep after 30 days of pumping. With his 800 feet of aluminum pipe he can water 50 acres around the margin of this slough, 2½ acres in every 24-hour day. A good measure of the handy nature of the outfit is that one man can move the whole line over to water the next 60-foot swath in 25 minutes. It requires



Sprinkler irrigating steep orchard slopes in B.C.

two applications on their spuds and their vegetable garden. At a point some distance from their buildings they are pumping water out of a creek to irrigate 15 acres of grain.

Like all Saskatchewan sprinkler operators they have not been at it long enough to say whether it will pay year after year, or not. But some of their money has been spent to buy experience. They accepted five-inch pipe from the manufacturer because the four-inch pipe which would have been sufficient was not available. Their pump cost \$235.00; 1,200 feet of pipeline with fittings, \$1,200; and if you throw in the cost of the dam on the creek they have sunk altogether, \$2,000.

Even the Americans with their longer experience cannot say what the depreciation on a sprinkler system should be. They assume it should be 15 years. Probably the life of the pumping outfit would be nearer the ten years allowed by the income tax authorities. With interest at, say, three per cent, interest and depreciation, taking the longer term, would be \$195 a year, or \$13 per acre per year.

In other words Deausys' garden and grain plot must earn that much more

moving every ten hours to provide the right depth of application, a most important consideration.

Barlow's pumping outfit illustrates some ingenious home engineering. It is driven by a 30 H.P. combine engine, mounted on a stoneboat, which provides an excess of power. It drove the pump at 1,000 revolutions per minute when first set up. No amount of tinkering would provide the right pressure, and the thing went lamely until Mr. Barlow changed the pulleys and stepped his pump up to 1,600 revolutions per minute. Mechanically it is perfect now. His tractor fuel consumption is three gallons per acre-inch of water applied to the field. He is delivering seven gallons of water from each nozzle per minute. Like most sprinkler operators, his nozzles are spread forty feet apart, or at each second joint, giving him 20 nozzles along his 800-foot line, or a total discharge of 140 gallons per minute. His power outfit gives him 35 lbs. pressure at the far end, which is a minimum requirement.

Mechanically perfect, but economically sound he will not say until he has had a few years' experience. This past fall he harvested 22 bushels

52 Bushels to the Acre!



with a MAJOR Sprinkler Irrigation System

This amazing yield was achieved in Southern Alberta last year. Adjoining acreage where flood irrigation was used yielded only 34 bushels to the acre.

Such instances are but typical of the increased yield MAJOR Sprinkler Irrigation Systems are bringing to parched prairie acres. Equally suited for root, grain or tree crops MAJOR Systems are available for one acre or an entire section.

The MAJOR System is the only sprinkler irrigation equipment developed, engineered and wholly manufactured in Canada today. It has these distinct advantages over the older form of flood irrigation

- makes all the land arable.
- irrigates on the level, the hills and the hollows.
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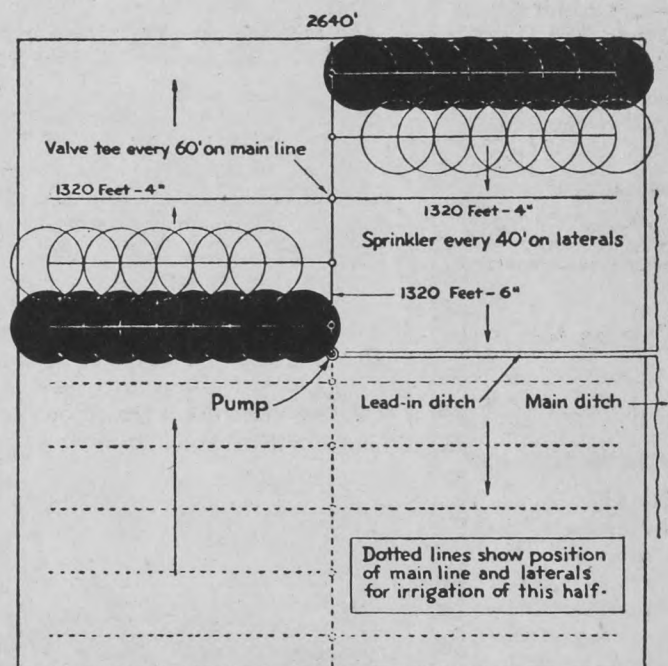
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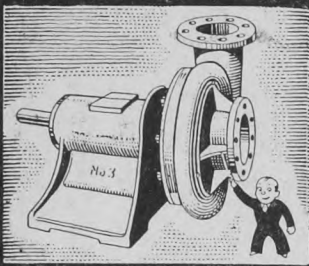
The diagrammatic sketch above illustrates how a 160 acre installation works. To keep the pumping unit stationary a lead-in ditch was dug. The main 6" pipe now remains stationary for half of the operation and only the 4"—1320' laterals are moved at required intervals. With one at each end of the main pipe to start, the laterals are progressively moved towards and past each other until the entire area is covered. Rotating sprinkler heads overlap as shown.



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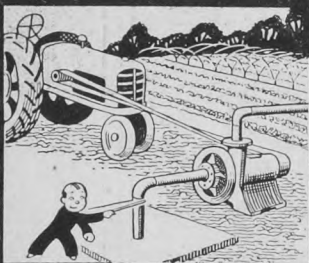


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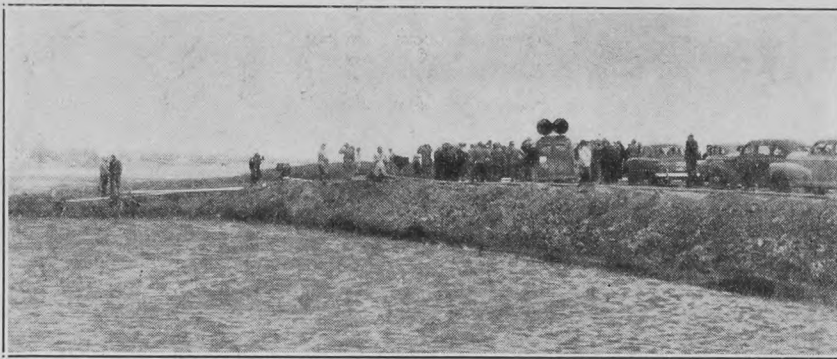
TROUBLE-FREE: The new Type "M" series is the result of many year's experience with all types of irrigation equipment. Your pump is of rugged ball bearing design... built for lifetime low cost service.



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MASTER TURBINE WATER SYSTEM

"City pressure on your farm
24 hours a day."



A visiting crowd inspects the water take-in on Wascana Lake from which the Regina Demonstration Farm gets its water for sprinkler irrigation.

from the sprinkled portion of the field and ten bushels per acre from the rest of it. Twelve bushels of wheat at present prices would leave him in the clear. What would happen in a year when rainfall gave a better or poorer yield on the non-irrigated portion of the field? What would happen with wheat at a different price level?

IN the bend of the Souris River on the outskirts of Estevan, Jack Pawson and his competent wife are running a market garden on 25 acres which can be irrigated by a sprinkling system drawing water from the river. He has 40 20-foot lengths of pipe, about one-third of it main line, and the balance laterals. His Allis-Chalmers B13-16 tractor can lift water 18 feet out of the river and put it on the land at the cost of one dollar per acre-foot.

Of all the projects I have seen, Pawson will probably get the best return from his outfit because of his higher priced products. His main business is the potato-eye trade which brings him orders from Sydney, N.S., to Sydney, B.C. On the day of my visit strawberries and onions seemed to be his biggest worry. Boosting the yield on eight acres of certified potatoes raises a farmer's income more than a proportionate boost in his wheat yield. Like all the other sprinkler operators, Mr. Pawson wants a little more experience before he will appraise it as an investment, but my impression was that he is not disappointed with his first year's trial.

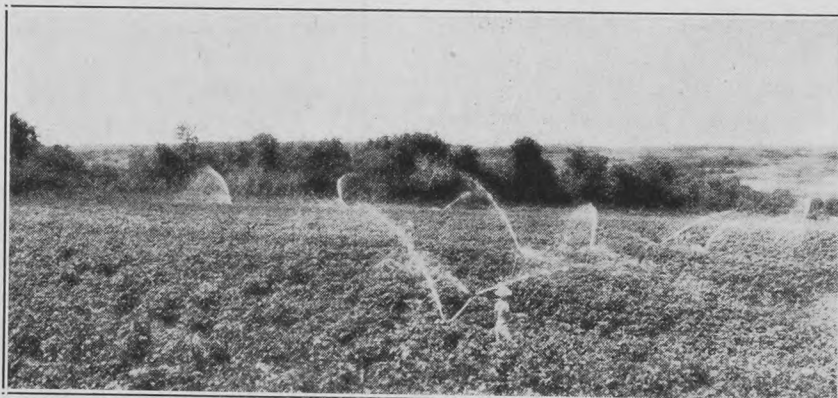
A few miles down river from Pawson's is the biggest piece of land

less trouble. Silt moving under high pressure cuts metal pipe and connections at a rapid rate.

AT Lang, Saskatchewan, Roy Vanstone has something interesting to show, and even a more intriguing plan to talk about. Budding irrigators had a hard time last year to acquire suitable pumps. Sprinkler systems operate under high pressure, up to 100 lbs. at the point of discharge, and low head pumps are useless. Perhaps in another year this may be solved for intending purchasers by enterprising British manufacturers who know all there is to know about heavy duty mine pumps. Vanstone solved his problem last summer by purchasing a second-hand fire engine pump. With the aid of this equipment, driven by a converted Ford engine, he pumps out of an ample road ditch which collects enough to keep his garden irrigated. If he ever wanted to increase the size of his garden all he requires is a snow fence on the high side of the ditch.

Here is one of the reasons for the use of high pressure pumps. The early critics of sprinkler irrigation alleged that the pounding of heavy drops of water on clay soils tended to puddle the surface and led to subsequent baking. The technical people overcame that objection by raising the water pressure which breaks it into a finer spray. It causes greater loss from evaporation, but one hears no more about bad effects on heavy soils.

Even with greater evaporation loss, sprinkler irrigation economizes on water, for it escapes the other sources of loss ever present with gravity



Sprinkler irrigating potatoes at Lumsden, Sask.

[PFRA Photos.]

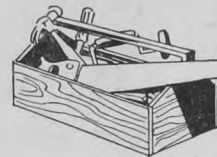
under sprinkler irrigation in Saskatchewan, a solid block of 400 acres in the Souris valley bottom. There are 60 sprinkler nozzles at work here putting on one-third of an inch of water every hour. Working daylight hours only, and putting on two acre-inches, the field was being covered at the rate of five acres every six hours.

One good feature of this outfit was the care being taken to prevent the entrance of algae and silt from the sluggish river into the sprinkler system. American experience warns us that algae clogs nozzles and gives end-

irrigation. There are no ditches from which water is lost by seepage. There is no surface runoff because the water is applied only about as fast as it can percolate. There is no deep percolation loss because there is never enough put on at one application to cause it. A survey of 130 orchards irrigating with sprinklers in the Pacific northwest shows that there is a 24 per cent saving of water over surface methods of irrigating.

The Vanstone farm at Lang offers an interesting possibility. It is traversed by a shallow draw which

Building Ideas FOR THE Farm



PRACTICAL HINTS
ON MATERIALS AND METHODS

Government experimental farms and practical farmers have found out, through experience, that milk production and egg yields are higher when animals and flocks are housed at uniform temperatures. During the past years, insulations—such as Johns-Manville Rock Wool—have been developed that help control these conditions. It is important to remember that insulation must be used in conjunction with a reliable ventilating system. Johns-Manville Rock Wool will control the temperature by reducing heat leaks, but it is the ventilating system that changes the air and helps to keep interior moisture conditions under control.

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A recent, 60-day test showed that the lack of insulation and ventilation cost one farmer \$4.81 a day. Milk production fell off during cold spells, there was more sickness in the herd and more feed was consumed. Experts agree that a cow eats less and produces more when temperatures are maintained as close as possible to the 50° level. If you build a new barn or remodel your existing barn, plan to use Johns-Manville Rock Wool under the roof area and in the side-walls.



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In order to assure maximum year-round revenue from a flock it is important to maintain good egg production during the late fall and winter. Sudden changes in temperature often cause sickness and reduce laying of the flock. You can maintain uniform inside temperatures—keep egg yield at an even level—with a hen house that is insulated with Johns-Manville Rock Wool.



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conveys spring runoff from miles north. When the spring freshet stops running it leaves a series of potholes, rarely dry enough in time for satisfactory seeding. The problem on this farm is late spring drainage. Common sense prescribes a ditch connecting the potholes and collecting all the water in the lowest one. This would create a permanent slough large enough to supply irrigation water for a good-sized seed plot. This is a bright bit of land utilization that Mr. Vanstone has planned for early development.

Sprinkler irrigation is an old thing to some British Columbia fruit growers cropping slopes too steep for surface flooding. But it is brand new on the prairies where it has caught the imagination like a grass fire. The P.F.R.A. has more applications for technical advice and financial assistance to instal it than that body can deal with immediately. It is estimated that 700 new systems will be established in Saskatchewan this spring sufficient to irrigate 25,000 acres if used to capacity. At the lowest estimate it will raise economic islands all over the Palisser triangle above the high watermark of feed and seed relief, come what climatic reverses there may be in store for us. It will put to productive uses some of the flood waters that now come cascading down prairie rivers in spring, spreading destruction in their wake.

Peace Tower

Continued from page 4

of praising Britain, they are now busied in the Canadian economy. Mr. Vincent is working in Calgary; Mr. Bennett is in Simpson's in Toronto.

Finally, these days, it is the Americans who inherit the earth. There came to Ottawa, a while back, Henry N. Groman, as attache at the American Embassy. The Yanks work in a place at 100 Wellington Street, facing the Parliament Buildings, and being the spoiled darlings of Embassy Row, the tendency has been, even for Canadians, to say how lucky the Americans are.

Well, when Mr. Groman got word he was going to Mexico City, a delightful capital and regarded by the whole diplomatic service as a "cushy" spot, he quit the job. Believe it or not, he is now running a shoe manufacturing business in Ottawa.

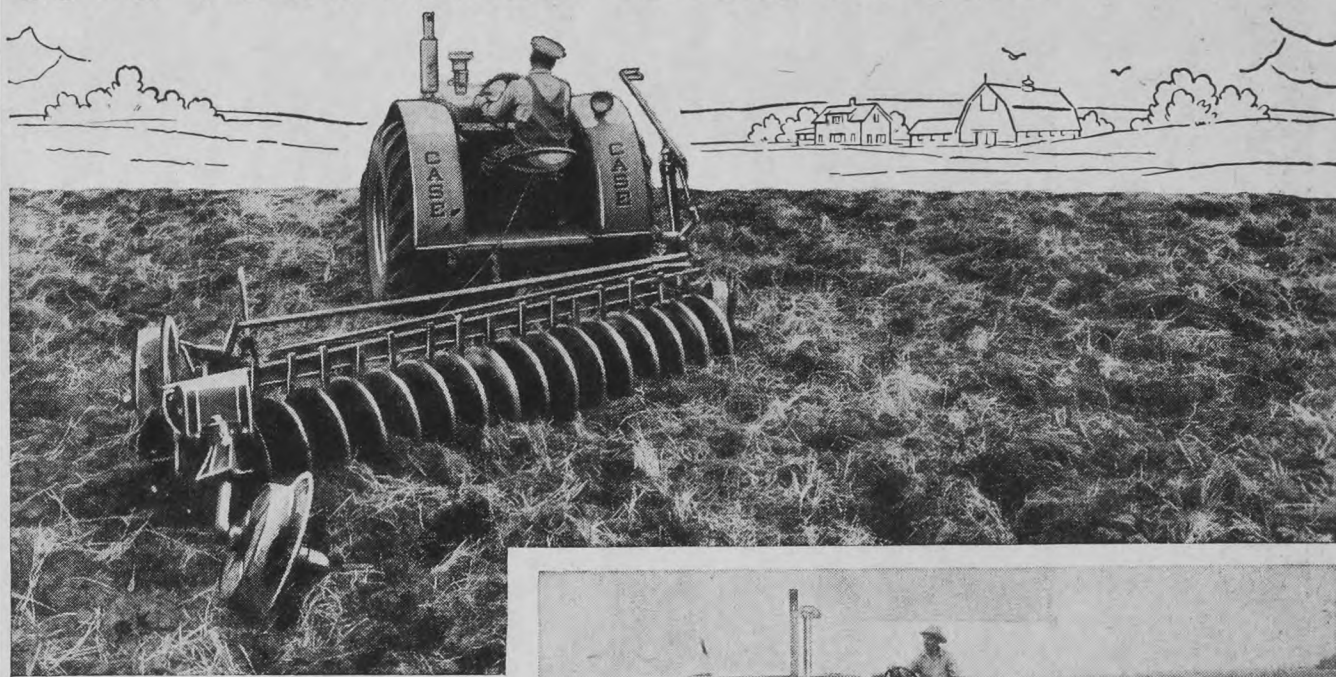
FOR all of these, it is a great wrench. To quit in some instances means these men cannot go home again. It means saying good-bye to families, it means inviting certain reprisals back in Europe. It means no more diplomatic immunity, with bows from the police and no parking tickets; it means no rare old embassy whiskey at bargain prices; it means giving up a pleasant life, an assured future, a good salary.

For some of the diplomats at least, it means a poor life, poor salary, few friends, nothing but poverty, bitterness, the jibes of once friends, the pity of new acquaintances. But above all this they put the freedom of Canadian air.

This freedom have I purchased with a great price, it is written somewhere, somehow, in the Bible. But the price is not too high, they say. Canada is worth it!

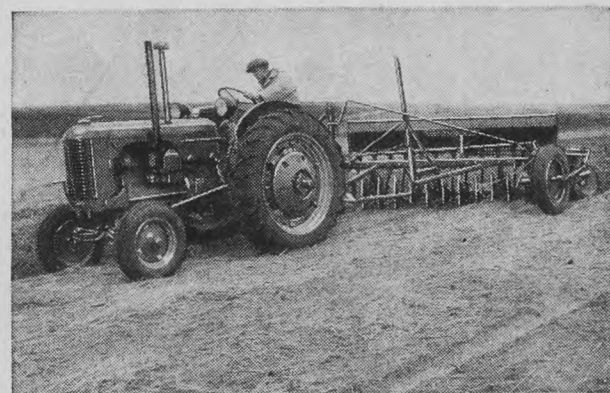
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Fast 3-plow capacity plus high clearance make this Case "DC-4" tractor the choice of many farmers. Its range of field speeds and its quick, easy handling get full capacity from implements of the 3-plow class. Here it is pulling a Case one-way disk plow with seeding attachment.

● Thousands of farmers have found that Case tractors cost less to own because they run years longer, with low upkeep. Their consistent fuel economy, year after year, keeps operating cost low. And now, with high wages for hired help and your own time more precious than ever, Case tractors save many a man-hour by their fast working speeds, eager power and easy handling.

The mighty Model "LA" pulls a 4 or 5-bottom moldboard plow, other implements of similar size. You do heavy field work in half the time, at half the labor cost, required with a 2-plow tractor. Fuel and upkeep per acre lower, too.

The new Case hydraulic implement control, now optional on the "LA," saves you still more time and effort. Touching a little lever raises and lowers plows, drills, combine headers. It's fast on full lift, or slow and slight as you like for accurate depth or height adjustment.

20 Great Tractors

Case tractors are built in four sizes, to fit every acreage. Models include standard four-wheel type, orchard tractors, and all-purpose tractors with adjustable rear tread to fit all row widths and a variety of front-wheel arrangements to suit all crops.

All 20 models have heavy-duty Case-built engines that give eager, flexible power at moderate piston speeds. All have deep-cushioned safety seats, room to stand when you like, and the full-swinging Case drawbar that locks automatically for backing. See your Case dealer about the model that fits your farm—start now to get its savings of time, labor, upkeep and operating cost.



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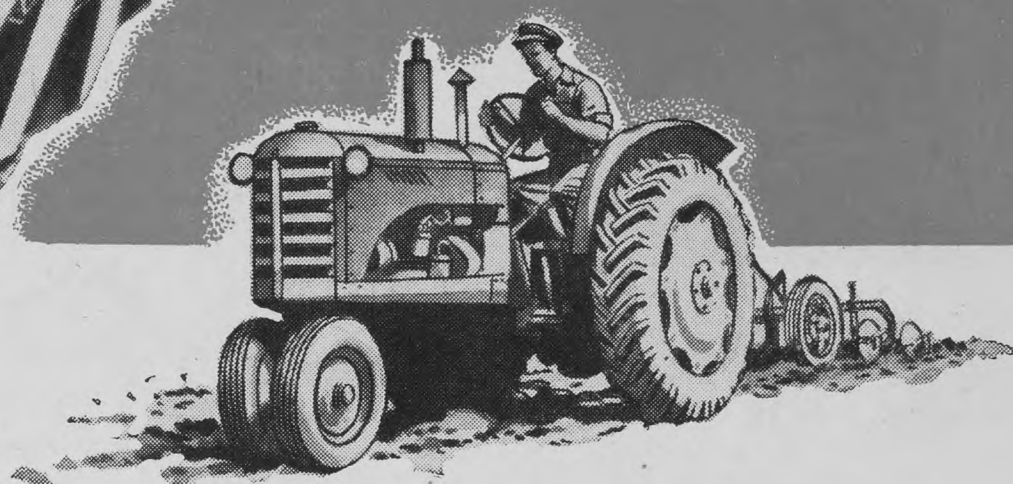


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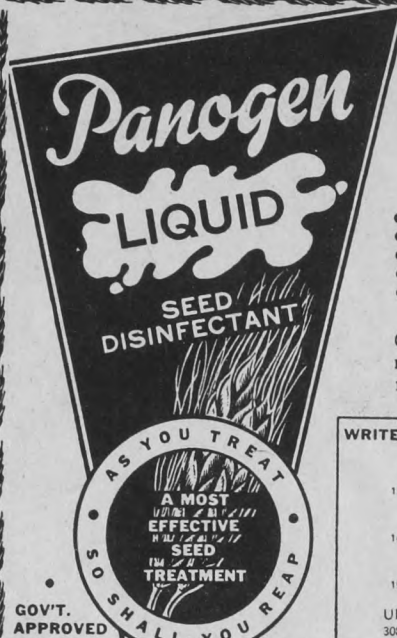
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The Sergeant

Continued from page 11

"We did our human best, Spaulding. Rather, *you* did; I was just a drag. Think of all the camps back west that you visited and saved from—from this. Think of the barrier you built up—"

His words went past Spaulding unheard. Spaulding was thinking of something other than personal satisfaction.

"Our patrol's ended here, Norrys," he interrupted. "We'll have to split up. You're going one direction and I another. Take the white chest and put it on your sled. Leave me my sleeping bag, guns and some grub. I don't want to come close or touch anything."

NORRYS swallowed his tumultuous questions, and obeyed. Instinctively he knew that Spaulding would presently break his silence and talk. Surely the *if* and *when* of his necessity had come.

"You'd best go back the way we came," Spaulding continued, when the transfer had been made. "It's an easy trip to the last camp. They'll give you a guide, fresh dogs. On your way back

mit' could make the rounds, reap a harvest, skim off the cream of that peltry—marten, mink, dark fox. With other traders staying away, a man could easy enough make thirty thousand dollars in a month's time. It was a temptation, a golden lure—"

Norrays nodded.

"The Indians kept to their camps," Spaulding spoke on. "I had the treaty-money whip-hand over them. But these irresponsible free traders—trading was the one thing I was afraid of. If there'd been no trading, there'd been no outbreak. I tried to guard against it. Dick and the constables had their hands full; they couldn't watch. I sent my best scout, John Ear-to-the-Ground, a footloose young Cree. He's been eyes and ears for me before in bush work. Reliable, tight-lipped, incredibly loyal and efficient."

"I told him to hover around those camps near Aux Mouffettes and see if any trading was going on. That same day I came to the Fullerton Station, he got back—without sled, dogs, anything. He'd run the last hundred miles on snowshoes. He fell in my cabin that morning while he was reporting."

"On his trip he shadowed a couple



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GRAHAM HUNTER

"It's an eggmat. A hen doesn't get anything until she deposits an egg!"

to the trading post, try to get those three or four hunters who were out when we visited their camps. If any of our vaccinations didn't take, get them too."

"But what," Norrys asked hesitantly, "—what shall I tell Dick and Aureo—where you are—what you're doing?"

"Tell them I went northwest. Into the Strong Woods. After a halfbreed trader that violated quarantine over near Aux Mouffettes and spread this scourge."

Norrays fairly jumped.

"Lord above! You mean—that's how it broke out? I can't believe it!"

Spaulding motioned him to sit down on the *komatik*. He himself sat on his own sled, facing Norrys.

"You can't believe it? *I can*. I foresaw it. Two months ago, when I clamped down that quarantine, forbade travelling, trading, I thought of all that wealth of furs dammed up in these camps. A hundred and fifty thousand dollars in peltry goes out of this district every year. You saw it at the camps we visited. You saw how crazy the Indians are to trade. They always are. A few skins—and they break for the nearest post with them."

"I thought, two months ago, how a *komatik* loaded with tobacco and 'per-

of camps. Discovered a trader had broken the law—was trading. Heading west to these other bands, spreading death. Keeping in the background himself, using messengers, stool-pigeons, to do the actual trading—so he wouldn't be found out. He was clever at the game, mighty clever. But John-Ear-to-the-Ground tracked him down and discovered who he was—"

Norrays suddenly started, as though Spaulding had shot at him. He gasped and half-rose to his feet. All Spaulding's silence on that patrol, his sombre hours of lonely thought, the heavy secret he had kept locked within himself—through Norrys' brain the whole truth volted in a stunning revelation, and his eyes were suddenly opened.

Spaulding noticed his agitation. Slowly he nodded. "Yes. Lem Fullerton."

FOR some time afterward Norrys did not look at Spaulding, nor speak. His emotions at first were weltering chaos. Gradually one shouldered all the others aside and rose dominant. He had long been a stranger to anger against a fellow mortal, but it swayed him now. A towering, furied anger that stirred him to the depths of his being, that made him want to lay prayer book aside and take up a rifle.

In front of his eyes, down the slope, were the stark evidences of Lem Fullerton's handiwork: the lifeless teepees, the dim footpaths untrodden, the abandoned toboggan chutes of the children—the blocks of ice they had harnessed dogs to and played at sledding.

And to his ears came a low, recurrent sound from one of the lodges. It was like the moaning of wind through the spruce tops—not violent nor vehement; but the low, primitive cry of unassuaged grief. And he knew it was an Indian woman mourning for a husband or a child.

For the sake of gain, a sled-load of peltry—these three stricken camps, this desolation, this suffering and death—for the sake of gain! A willful and premeditated act. Lem Fullerton had known very well the consequences of his trip. He was not ignorant, like Apah-Stamik. He had been expressly warned against trading to the east. He had broken the law willfully, knowingly. He would not otherwise have traded secretly and built up that lie of going westward to the Thunder Hills.

It was an act so selfish, so cruel and heartless, that it seemed incredible to Norrys. But there beneath his eyes lay the evidence to prove it true.

PRESENTLY he heard Spaulding speaking again. The terse tone recalled him.

"Maybe you understand why I didn't tell you till now. There was a chance we could win our race—undo his work. If we had, I meant to cover it up and give him a solemn warning. *But this can't be covered up.*"

Norrys was looking past him at the desolate lodges down in the grove of black tamarack.

No, there was a crime that could not be covered up.

"There's a couple of things," Spaulding spoke on, "that I've got to tell you. No one but you must ever know and there is something you can do for me. When you get back, you can explain to Aurore—and to Dick if he's home—that I went northwest after a halfbreed trader. They'll want to know where I am. Dick'll want to know how this scourge broke out. Fix up some story that hangs together. Anything—just so they never guess the truth. I don't know when I'll get back—"

"You're going after Fullerton? You know where he is?"

"Yes. He's got a cache up northwest of Riviere Epinette headwaters. A secret station he uses for underhanded work. Ear-to-the-Ground and I found it once. He's probably made for there. Either got suspicious, or else had all the peltry he could sled. He'll store it there—till he can safely fetch it out. From that cache he'll go on west to the Thunder Hills and come home from that direction."

Norrys looked at Spaulding intently. He knew Spaulding already had made up his mind; he could read that in the purposive hard lines of his comrade's face. His question came hesitantly.

"What are you—you going to do—when you take him?"

"What would you do?"

Norrys stared down at the camp as he strove to answer.

"For this—and those other two camps—he'll get two or three years' imprisonment, his trading license revoked, perhaps a fine. Man, that

"Long on acreage—short on manpower?"



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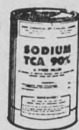
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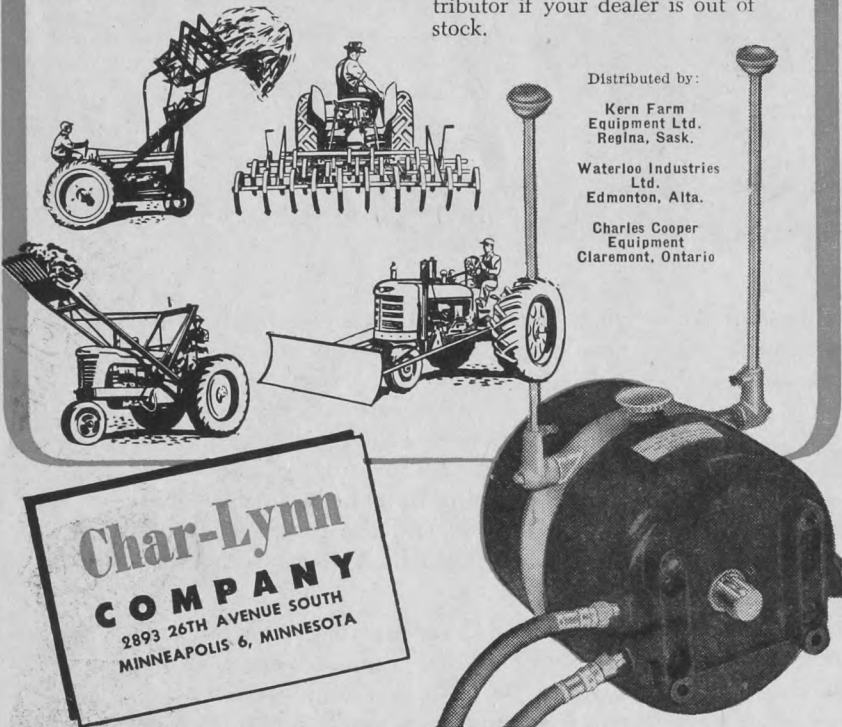
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isn't justice! It's a travesty on righteous punishment."

"Yes, a travesty on what he deserves. But there's another thing—a bigger thing. Where would the real punishment fall?"

THE question startled Norrys. It ripped aside a veil for him. It opened up a dark vista he had not yet glimpsed; and he shrank back aghast for what he saw there. In his anger he had thought only of retribution—of a stern and fitting justice to a dastardly crime. He saw now that he had been short of sight, that the situation was not simply a matter of meting out justice; that Spaulding, in his lonely hours of thinking, had seen far deeper than he into that tangled problem.

"What will it mean to Dick?" Spaulding continued. "He's getting his three stripes in a few years. He'll be one of the youngest inspectors in the Force, and nothing to stop him from climbing on up. We've been friends, but I never pushed or favored him. He's earned his promotion; his prospects are only what's due him. But when this affair comes to light, do you think the Board will promote him? They're a thousand miles away; they don't dare take chances on 'like father like son'. Dick's career will end, sudden.

"But that's a material thing, Norrys. I'm thinking of something not so easy to see but a hundred times worse. Dick and Aureore—they're hardly more than children. You know how they idealize. You know how sensitive they are. The real punishment will be theirs, because they feel keenly. Especially Aureore. The shame and disgrace would hound them the rest of their lives. Shame can't touch a man like him, but it would break them."

NORRYS could only nod. He saw the profound truth in what Spaulding had said. His acquaintance with Dick was slight, but with Aureore he had been cordial friends. He would have loved her if she had not belonged so utterly to Spaulding. He knew her intimately. He knew that because of her childhood at the isolated trading post her father was far more an ideal to her than to most girls. As striking proof of that, she had put off her marriage with Spaulding indefinitely. Her ideal was mistaken, but none the less precious to her.

When she heard about her father's infamy, about the three death-smitten camps, it would be a worse crash for her than Dick's ruined hopes in the Mounted. Norrys could see her dark-lashed eyes opening wide in stunned, bewildered tragedy.



"I guess you thought I'd never finish your wedding gift."

"Let the punishment be to the guilty, not to the innocent," Spaulding broke into his thoughts. "And let it fit the crime. All along on this patrol I had hopes of getting to Aux Mouffettes before any damage was done. But we lost. Down there, when I was going from lodge to lodge looking inside of them, I said: 'Lem Fullerton's got to pay'."

"A fellow in the Mounted is not supposed to have any feelings of his own. But a person who does only his perfunctory duty is a machine. If he's human, there's times when he's got to be a law to himself and take things into his own hands. That's what I'm going to do. I've got to shield Dick and Aureore. I've got to make Fullerton pay. There's only one way to do both. I'm going to follow Lem Fullerton northwest—track him down. He's never going to come home."

THE silence lengthened into minutes. Norrys looked away, out over the tops of the black tamarack.

He knew that Spaulding was waiting for his answer. He half-guessed that more than a month ago, at the Fullerton trading station, Spaulding had had this very moment in mind in asking him to go along on the patrol. Whatever the answer might be, it would not sway Spaulding one way or another; nothing could stop him now. But it would be a solace, on the grim job ahead, to know that a fellow mortal had backed him up with moral approval.

He did not try to side-step or evade Spaulding's unspoken question. But he did want to see the whole thing clearly before giving his judgment.

If there had been malice or personal anger or selfish reason in Spaulding's intention, the answer would be simple. Norrys could not assent to it. But the Sergeant was taking a heavy burden on his shoulders purely for the sake of others. Instead of letting Dick and Aureore bear the brunt of the punishment, he was assuming it himself.

"Have you thought, Spaulding," he asked presently, "of all the consequences—to yourself? Won't it shadow your friendship with Dick? Do you think you can ever marry Aureore—remembering that?"

"I don't know. Maybe I could make myself forget. Maybe the secret wouldn't weigh heavy, after a time. I don't know."

He could see that Spaulding did realize those consequences more fully than he himself, and yet did not hang back from a job that had to be done.

"There's another thing, Spaulding. You, lone-handed, going up against a man who's bush-wise and a good rifle shot himself—aren't you taking chances?"

"I wouldn't want a dead-certain drop. I don't intend to shoot from ambush."

Norrays did not press the point. For one reason, he knew that Spaulding was efficient with a rifle. For another, he devoutly believed that just Providence would not allow the Sergeant to be killed and Lem Fullerton to come home instead.

"It's a terrible thing to do, Spaulding," he said, finally, solemnly. "But it's a more terrible thing *not* to do it. My judgment, like yours, is fallible. But—if it's any help or comfort to you to know—I believe you're doing the right, courageous thing."

TO BE CONTINUED.

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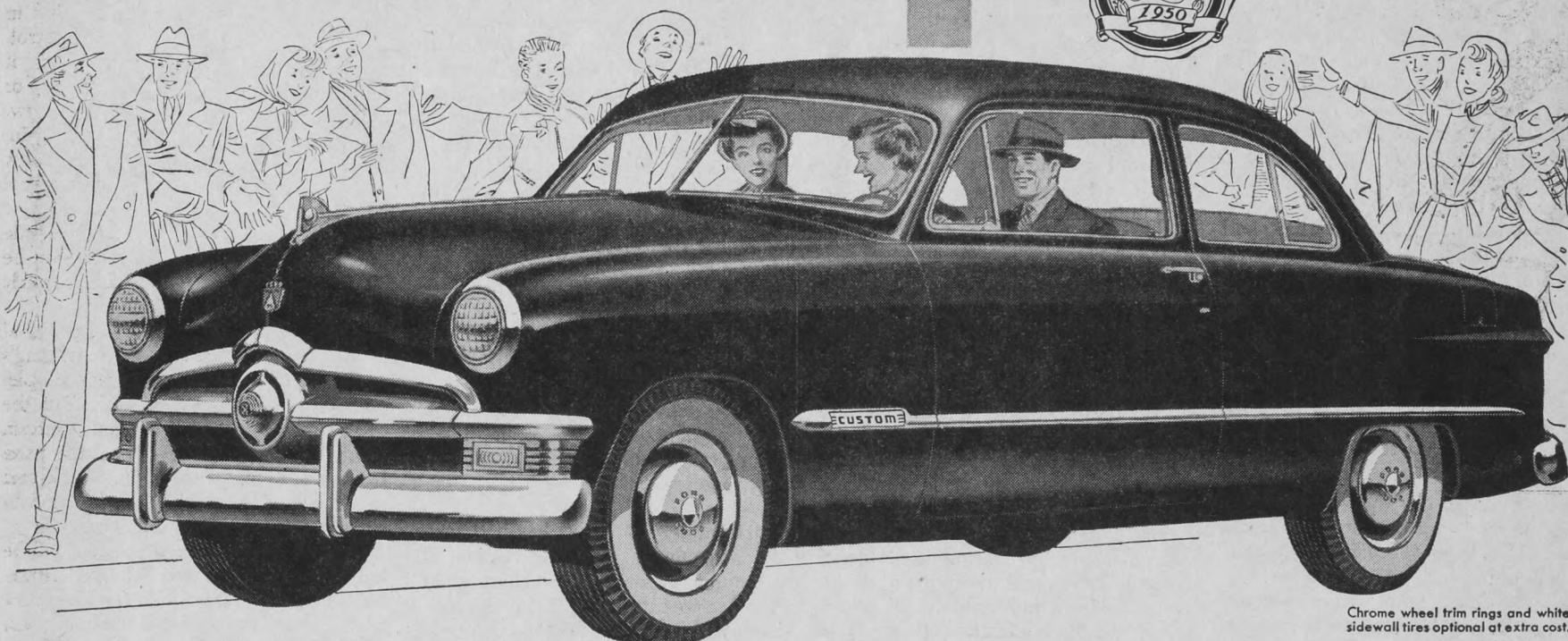
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Why Do They Confess?

EVER since the Bolshevik trials in 1936, when a stunned world heard the self-incriminating confession of the leading figures of world-communism, the question "why do they confess?" has become one of the major mysteries of modern times. It has baffled not only the man in the street but also statesmen, diplomats, psychologists, criminologists, authorities on Russian affairs and experts in pharmacology. They all try to find some kind of explanation for the astounding fact that whenever men are answering charges in a Communist court, they invariably plead guilty without even attempting to invoke extenuating circumstances — not even in the face of a certain death sentence.

The psychological make-up, as well as the social background of these men, has been different. The long list has included authentic heroes like Muralov, sophisticated intellectuals like Zinoviev, brilliant and versatile dialecticians like Radek, sadistic executioners like Yagoda, cool and dignified prelates like Joseph Cardinal Mindszenty, and former stoolpigeons like Rajk. On one point, however, all these men seemed to resemble each other: after spending a few weeks or a few months in the cells of the Communist police, they all showed an amazing eagerness to confess their alleged crimes and to admit that they had deliberately and constantly violated the laws. Some of them, as, for instance, Bukharin, not content with having confessed their guilt, went so far in their repentance as to demand that a death sentence should be passed on them!

To solve the mystery of voluntary confessions, during the past 13 years six main theories have been advanced.

The Essex theory was suggested by the London Times during the Moscow trials. This theory recalls the attitude of the Earl of Essex during his trial in 1601. Essex, who was considered one of the best-looking men in England, succeeded his father-in-law, Leicester, as the official favorite of the 70-year-old Queen Elizabeth. The historians are still discussing whether Essex was the lover or only the protégé of the Virgin Queen. Clever, ruthless, ambitious and arrogant, Essex obtained the highest favors from Elizabeth which did not prevent him from taking part in a plot aimed at her dethronement and probable assassination. Elizabeth ordered him to be put to death. "Her feelings towards him," says one historian, "were a curious blending of tenderness, maternal protection and lust."

During his trial, the repentant Essex pleaded guilty to all counts and wrote to Mary, Queen of Scots: "I am the vilest of men and had I a hundred lives, they all deserve to be sacrificed for my crime against God and her sovereign Majesty, the Queen."

Basing its conclusions on a thorough analysis of the behavior of Elizabeth's favorite, the Essex theory maintains that a full confession of guilt may be obtained on two conditions. First, the accused must be a believer—a man of deep faith and strong convictions. Second, the investigating authorities must succeed in establishing in the mind of the accused "a conviction of sin"—the conviction that he has acted

against higher interests and principles.

In the case of Communists—who are believers without being Christians—it should be relatively simple for specially trained investigators to set in motion a psychological process based on these considerations.

THE Rubashov theory is so called after the hero of Arthur Koestler's famous novel, *Darkness at Noon*. Koestler doesn't completely reject the Essex theory, but he expresses a different opinion as to the methods by which the "establishing of the conviction of sin" is obtained. The Essex theory is based on religious mysticism; the Koestler theory rests on a flawless logic.

After his arrest, Rubashov, the protagonist of *Darkness at Noon*, is first subjected to the strongest moral pressure. From his cell he can witness the appalling scene when one of the greatest heroes of the Soviet Union—probably modelled on Muralov—is being ignominiously dragged to the gallows. This constitutes the "process of mellowing," and when it is terminated the interrogation starts. He is first goaded into admitting that he is a convinced, faithful, unflinching Communist. This is accepted as the basic fact in his confession. And now the counter-attack is launched. Using all available tricks of dialectics, his accusers prove to him that if he is devoted to Communism, he should sacrifice his life for the cause. He first refuses, but after some weeks of solitary confinement he wearily surrenders and agrees to confess to anything that his accusers want him to confess.

It is quite possible that this method was used with Cardinal Mindszenty. We may assume, then, that he was first made to declare that he would not hesitate to make any sacrifice for the Church. After that it was proved to him dialectically that as a result of his confession and subsequent disappearance from public life, a truce between the State and the Church could be established.

The Urch theory is named after a former teacher in Czarist Russia. R. O. G. Urch was arrested during the

Urch asserted that mock executions have frequently been arranged in Russia in order to supply the N.K.V.D. with bait for hooking individuals who were to be tried by Soviet Courts. In this connection it is interesting to recall that during the past years American correspondents in Moscow have repeatedly reported rumors purporting that Fannia Kaplan, the woman terrorist who shot Lenin, is still alive.

The theory of hypnotism has been widely held. The behavior of certain defendants — including Yagoda, the dreaded chief of the Secret Police—who showed a particular eagerness to accuse instead of defending themselves, prompted some observers to seek in hypnotism an explanation of the "spontaneous confession." Experts, including world-famous psychiatrists, have pointed out, however, that hypnotic influence is limited. It certainly cannot determine the actions of an individual many hours after hypnosis.

During the Moscow trials the defendants have all been aware of the fact that many observers ascribed to hypnosis the avalanche of self-incriminating confessions. Bukharin admitted having read in prison Feuchtwanger's book in which the possibility of hypnosis has been suggested. "But I conducted my own defence from the legal standpoint, too," exclaimed Bukharin, "oriented myself on the spot, argued with the State Prosecutor, and anybody, even a man who has little experience in this branch of medicine, must admit that hypnotism of this kind is altogether impossible." Bukharin may have been wrong on many points when he delivered his final speech. On this point, however, his opinion was unanimously supported by most psychiatrists.

THE theory of drugs has had some acceptance. Bukharin denounced with equal vehemence the charge that, in order to extract "spontaneous confessions" from the defendants, the Secret Police administered a certain "Tibetan poison" to them. Pharmacology does not know of the existence of such a poison.

On many occasions the non-communist world has been astounded at confessions of guilt given to a communist court by men such as Cardinal Mindszenty. Here several possible explanations, including hypnotism, isolation, administration of drugs and several others are suggested as a possible explanation. No one is likely to be the complete answer, but all are very likely partly right

by EDMOND DEMAITRE

Bolshevik Revolution and spent several years in Soviet prisons. An expert on Russian affairs, he later published two very successful books, *We Generally Shoot Englishmen* and *The Rabbit King of Russia*. As correspondent of the London Times in Riga, Warsaw, and Stockholm, he followed very closely the developments in Russia. His dispatches had been frequently quoted during debates in the House of Commons.

According to Urch, the Soviet method of obtaining "spontaneous confessions" consists in putting the accused in the presence of a man who had been previously tried, had pleaded guilty, was sentenced to death, and was known to have been executed.

It knows, however, of scopolamine, fenedrin, benzedrine and actedron, which are strongly related powerful stimulants. When absorbed in small quantities these chemicals produce first a hypertension of the nerves, a sudden elation and a tendency to loquacious outbursts. These symptoms may last for several hours, depending upon the quantity of the stimulant that has been absorbed. The nervous tension is usually followed by a state of semi-collapse, often described as "psychological hangover." The symptoms of the latter include increased impressionability, fear and a considerable reduction in will power.

The stimulants can be administered without the subject being aware of it.

Thus, the possibility that in the Communist countries such drugs are being used during the "preparatory phases" of the interrogation cannot be altogether ruled out. Such treatment, coinciding with round-the-clock interrogations, during which the accused is placed under klieg lights, is likely to produce a mental state which would greatly reduce the moral or intellectual resistance of the individual. After comparing photographs of Cardinal Mindszenty taken before and after his trial, Dr. Bela Fabian, a former member of the Hungarian Parliament, voiced the opinion that the Cardinal had been drugged with one or the other of the scopolamine products before and during his trial.

That the police of a totalitarian regime do not usually hesitate to use drugs on defendants has been amply evidenced during the memorable Reichstag Fire trial in Leipzig. At that trial the chief defendant, the Dutchman van der Lubbe on whose alleged confession and activity the case against the Communists had rested, appeared in a state of complete physical and psychological collapse. During the whole trial he was unable to answer a single question. He could not even remember his father's name.

It is not impossible that in some cases, at least, the Communists have borrowed the Nazi technique. But it is equally possible that the Nazis borrowed it from the Communists.

THE theory of isolation has some exponents. According to a theory advanced by Dr. Anton Ciliga, a former Yugoslav Communist leader who spent several years in Soviet prisons, the spontaneous confessions result not from a psychological but from a moral collapse. This state is produced by keeping the prisoner in special cells, called "isolators." After his arrest, the prisoner is told what kind of a confession is expected from him. Then he is left alone for days, for weeks, even for months, if necessary. Food is passed to him through a hole in the door. He never hears a word spoken; he never sees a human face. He is left alone with his thoughts, his fears, and with a paper which he is ordered to sign.

Dr. Ciliga says that fellow prisoners told him that after spending a few weeks in the "isolator" they signed whatever "confession" was put before them. The signed confession was then shown to another prisoner whom it incriminated. This second prisoner in turn confessed, and so it went on until everybody had "confessed."

Out of the welter of all these contradictory theories one fact emerges: nobody has ever had an opportunity to interview a defendant after he pleaded guilty and had been sentenced by a Communist Court. The psychological and physical prelude to the confessions thus remains a matter of speculation.

A possible explanation can be found, however, if, instead of asking "Why do they confess at their trials?" we ask "Who are brought to trial?" Here is an answer which seems logical in the light of past happenings. Normally, in Communist states, only those are brought to trial who previously agree to plead guilty. The others are not brought to trial at all.

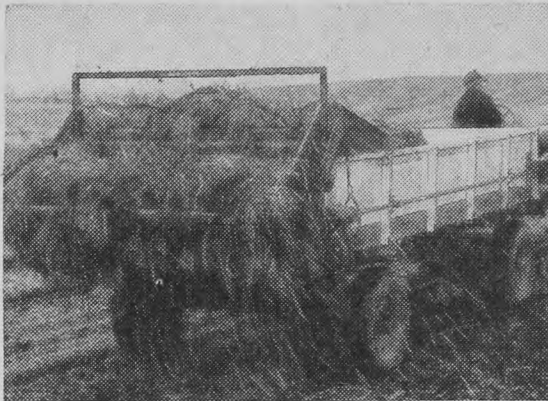


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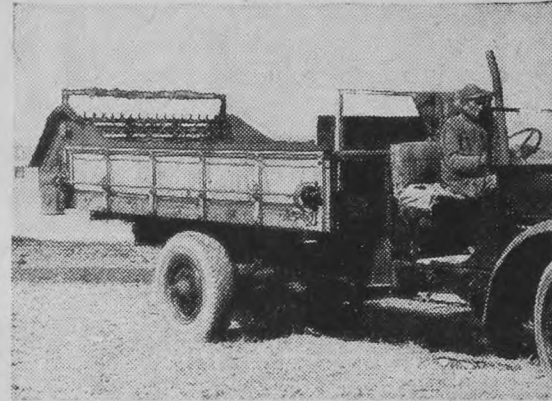
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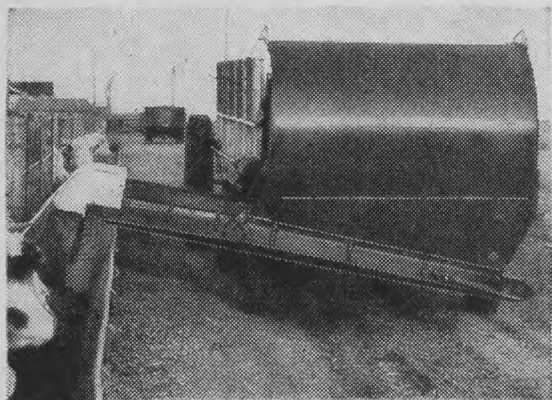
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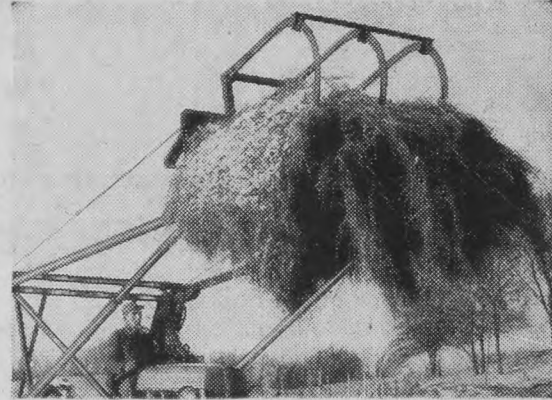
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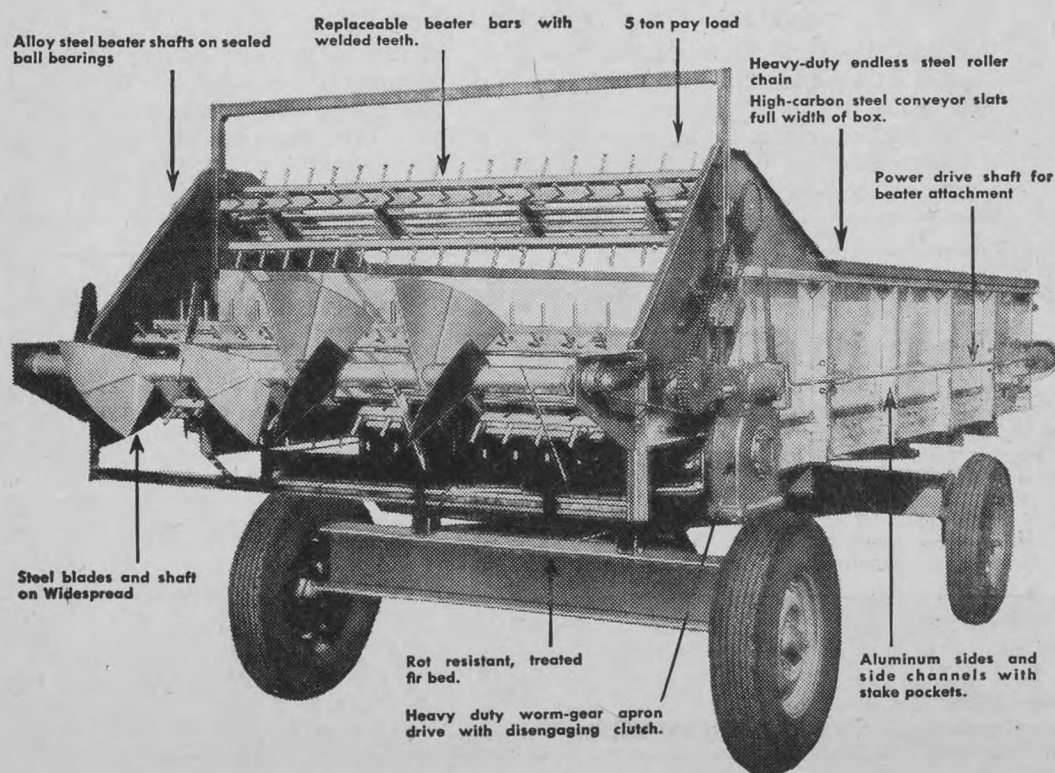
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The original ethyl ester formulation with 3.6 lbs. acid content per gallon (57.6 oz.) for hard-to-kill weeds. Can be mixed with oil for airplane spraying.

WEEDONE BRUSH KILLER 32

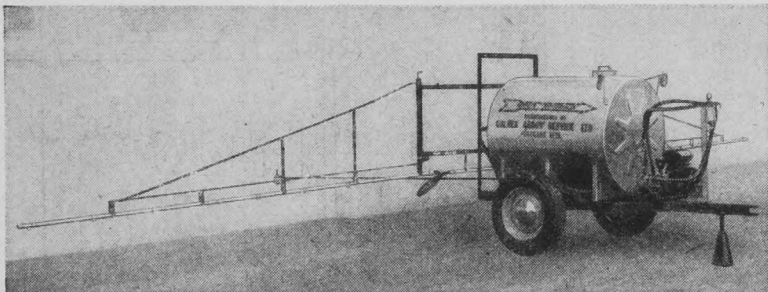
A combination of 2,4-D and 2,4,5-T. Effective on all Brush Killing work in pastures, right-of-ways, headlands and roadsides. Weedone 32 is the pioneer. Write for descriptive literature.

WEEDAR 64

The amine concentrate with 4.8 lbs. acid content per gallon (76.8 oz.) for easier-to-kill weeds. Completely soluble in water—will not clog spray nozzles.

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As Canada's pioneer farmer-owned Co-operative United Grain Growers Limited has, in its 44-year history, earned and saved for its thousands of shareholders and customers many millions of dollars. Efficiency and economy have always been the tests applied in carrying out the Company's policy of "Service and Savings to Farmers." Wherever a new improvement would, in the judgment of those responsible, result in more efficient service at U.G.G. elevators or terminals, it has been unfailingly adopted. Whenever a new commodity or service in the field of farm supplies

has come to light, the advantages and benefits claimed for it have been carefully investigated and, if found to be true and reliable, have been made available to farmers with utmost promptitude at U.G.G.'s 628 elevators and over 2,000 farm outlets . . . in this way U.G.G.'s policy of "Service and Savings to Farmers" has been extended and applied to the utmost limit, making it possible for every farmer who delivers grain or purchases supplies at U.G.G. elevators or farm outlets to enjoy UTMOST SERVICE, UTMOST VALUE and UTMOST SAVINGS.

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Permanent Snow Fences

In the rural municipality of Star City farmers are planting hedges to keep snow on the fields and off the roads

MOST farmers have shovelled their way through large banks of snow that accumulate against bluffs growing near the road. A dozen drifts can cut a road off. Around Naisberry, Saskatchewan, a number of farmers decided that they would move the bluffs, and the drifts that they caused, back from the road into the adjoining fields.

It is fair to say that Wes Eastman—reeve, registered seed grower and good farmer—was the enthusiastic force that got the planting started. In the spring of 1945 he planted a row of trees along part of his town road, and, with the approval of his neighbors, planted on through their land, with the intent of getting hedges against the road from his place to the highway.

That fall interested parties approached the municipal council to see if they would support a tree-planting project of this nature. The council agreed to the tune of paying six cents a rod for plantings, paying the freight on the trees from Indian Head and supplying seed for those who wished

of half a mile a day. He used caragana and planted the small trees a foot apart—2,500 to the half mile.

The greater part of the 60 miles of trees that have been planted up in this part of Saskatchewan have been caragana. Willows are used in low-lying areas or in areas where the land is moist or the water table high. When willows are used they are planted four feet apart.

It is felt that a good case could be made for a wider use of willow hedges in areas where moisture is not a constant and pressing problem. The fact that the trees do not have to be planted as close together as caragana makes them less work to plant. They grow rapidly if growth conditions are right and they attain a good height.

The practice at Naisberry is to clip for two years. Clipping can be done with a S.P. combine or a swather, and some farmers use a mower. Any one of these machines will clip a mile of trees in short order. The trees are clipped back to 12 inches the first year and 18 the second. Most of the farmers



This hedge near Naisberry, Saskatchewan, catches blow snow and serves to keep town roads from drifting over.

to plant grass from the tree row to the road. They required that the trees should be planted not less than 75 and not more than 90 feet from the centre of the road. In 1948 this was changed to a minimum of 90 and a maximum of 100 feet. The assistance policy has also been changed so that while still paying freight on the trees the council pays five cents a rod when the trees are planted and a further five cents a rod at the end of the first year if the trees have had good care.

The people in the four divisions of the R.M. of Star City that have taken part in this project have reduced planting and care of trees to a science. Most of them plow a furrow with a three-bottom plow and then place the trees against the turned side at a slant, take another stroke with the plow to cover the roots and then run a tractor tire over the roots to pack the earth in around them, and the job is done. They reckon that two men with a plow and a tractor can plant a mile of trees in a day.

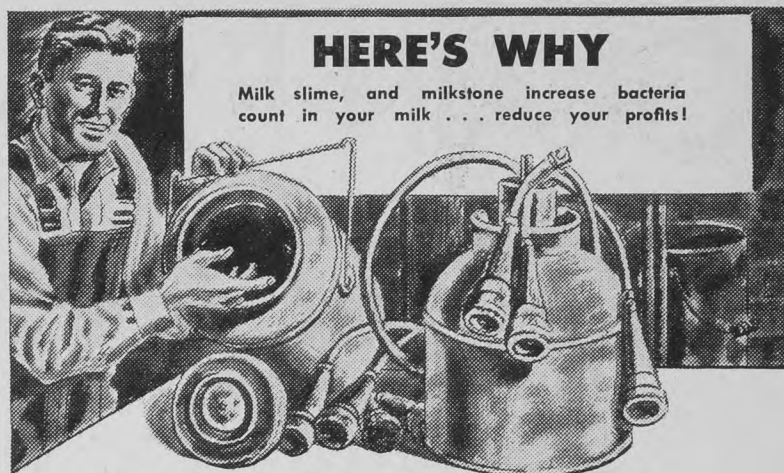
It appears that if a man is keen enough the job of planting trees is not too arduous. If George Schelectie can be taken as a measure then this must be true. Mr. Schelectie is 64 years of age. Working by himself he planted four miles of trees at the rate

are leaving six or seven feet of black earth on either side of the trees. This seems to give them enough moisture. Those years when the field is summer-fallowed the trees jump ahead.

What is the use of all these hedges planted in the field parallel to the town road? The Experimental Farm at Melfort has caragana hedges from the farm site to No. 6 highway, and in many years the road has only had to be snowplowed once. The hedges are 90 feet back from the road. In March, 1949 the snowbanks extended 48 feet on either side of the hedge and were five feet deep. The half-mile road was bare with the exception of about 100 yards, and even here the snow lay only eight inches deep.

The first object is to keep the snow off the roads. However, there are worthwhile secondary effects. "I think I can see the difference in crops along hedges only four years old," said Wes Eastman. "The hedges hold a lot of blow snow on the fields and a lot of it soaks into the land in the spring. Added to this the hedges provide good pasture for bees in the early part of the summer and, at the same time, add an attractiveness to the landscape. The big feature, of course, is that they keep snow off the town roads and let cars go through."—R.O.H.

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3. Replace sealing rubber and suck a pailful of boiling water, or sterilizing solution, through machine. Shake well, dismantle and leave all parts to dry.
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THE WINNIPEG GRAIN EXCHANGE advocates floor prices and has done so for fifteen years.

THE WINNIPEG GRAIN EXCHANGE supports a Wheat Board to administer floor prices and to ensure that farmers WHO WISH TO MARKET THEIR GRAIN THROUGH THE BOARD may do so voluntarily—and has done so since 1935.

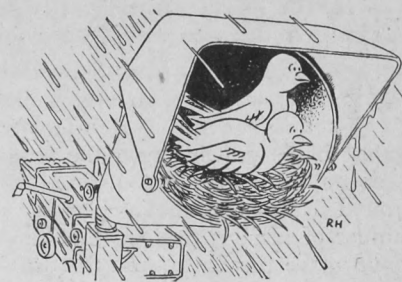
THE WINNIPEG GRAIN EXCHANGE believes that all producers should have freedom of choice in marketing methods, so that those who wish to deliver to the Wheat Board may do so; and those who wish to sell on the open market, may sell when and where they choose.

Regardless of what others may say—others who have misrepresented the Grain Exchange in the past and will try to do so again—the foregoing clearly sets forth the oft-repeated position of the Winnipeg Grain Exchange.

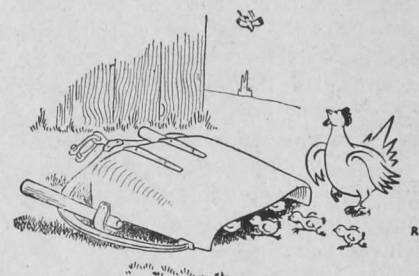
FARMERS WHO AGREE WITH US ARE URGENTLY INVITED TO WRITE THEIR PROVINCIAL AND FEDERAL MEMBERS OF PARLIAMENT AND EXPRESS THEIR VIEWS.

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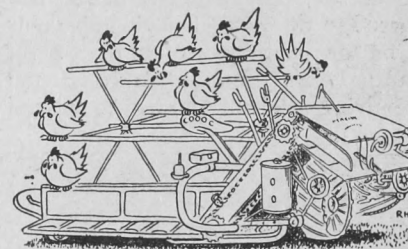
Dual-Purpose Machines



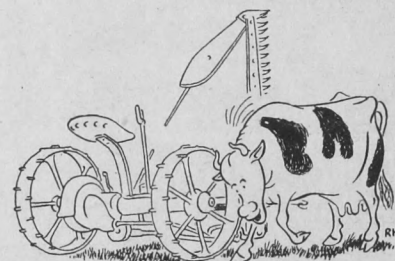
At times we wonder—



If the farm warrants—



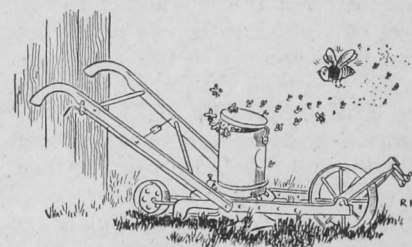
An expensive implement—



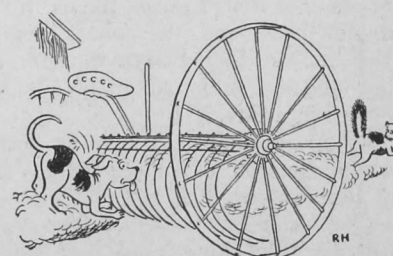
That is used a few times a year—



But there are other members—



Of the establishment—

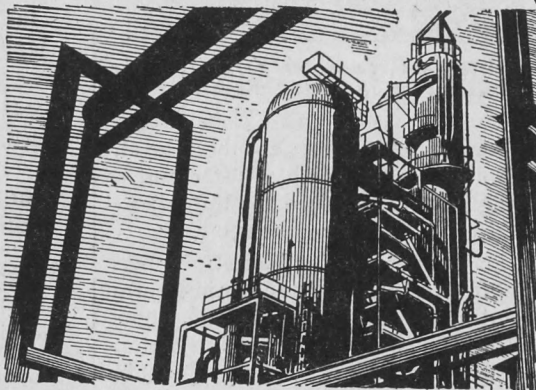


—Ronald Helmer.

That have no doubt it does.

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IN EVERY LIFE

Canadian Nickel



honor to date, as All-Canadian aged cow.

MR. FRASER started into purebred Holsteins as soon as he bought the farm, which means that he has been 22 years—a comparative short time as animal breeding goes—in achieving the great and distinctive honors which he received last year. He began by buying daughters of King Toitilla Acme and eventually had 10 of them. They were backed by a 1,327-pound butterfat record (U.S.), and by 1937 he was able to sell animals which later received the All-American get-of-sire award and the All-American aged cow award. At the present time all of his best animals go back through Toitilla Acme.

Herd improvement has its disappointments, even under the best of care and management. Mr. Fraser had one such in 1935, when Spring Farm Inka Jewel, bred by himself but owned jointly at the time with James R. Henderson, Kingston, Ontario, was injured in the manger and died. Top prices at the time were at a much lower level than in 1950, and the \$1,000 which he was thought to be worth, seemed like a fortune.

Rag Apple bulls have been used on Spring Farm for 10 years. Next to the \$20,000 bull, the most notable con-

believes we can produce good purebreds more cheaply, on the whole, than can the United States and that we have proportionately more farmer breeders. American buyers want both good grades and purebreds. Many of them will be milked for one year and turned off. Purebreds have this incentive to the buyer; they may enter the U.S. duty free. Mr. Fraser furthermore believes that Canadian breeders right now are paying just as much for good purebred breeding animals as are American breeders. They may not always do so, but right now it is true. He had, himself, just picked up a \$1,225 heifer with a 14,000-pound record, the day before I visited Spring Farm.

THE sires at Spring Farm are available for service by artificial insemination. A plan is in operation in Peel County, which Mr. Fraser believes to be the cheapest in the long run and the most satisfactory. A veterinarian with considerable experience with artificial insemination established his own club among breeders and herd owners. There are about ten breeders who own bulls and each puts his own price on the services of individual bulls. The herd owner picks the sire he desires and the veterinarian does the insemination for a fixed fee.



The large, well-painted bank barn at Spring Farm accommodates both cattle and feed during winter.

tribution made by this family to Spring Farm history was by Spring Farm Lochinvar, owned jointly with W. L. McClure, Brampton, and later sold to South America as a calf for \$14,000. Spring Farm Lochinvar was the son of an old cow purchased at the Mount Victoria sale for \$1,175, in calf to Montevic Lochinvar. As an investment, the \$1,175 paid off very well.

All of these, of course, are highlights. They do not tell of the long years of breed study, careful selection of individuals, blood lines and matings, or the thousand and one details of herd management. They do serve to show what can be done over a period of years, where diligence and ability must substitute for a generous bank account and hired brains. They show that good farming can be combined with successful livestock breeding. Indeed, Mr. Fraser, who is much in demand as a Holstein-Friesian judge at our larger shows and covered the western circuit in that capacity last summer, says he can't understand how farmers can keep on producing grain year after year without devoting more attention to livestock.

He believes the prospects for a continuation of the export market for purebred Holstein cattle are good, especially in the United States. He

In the case of Spring Farm Sovereign Supreme, for example, the fee was \$10 per service, with a further \$20 if the calf was a heifer, and an additional \$90 if it was a bull. In areas where the population is not very dense, bull owners would not be so conveniently located and the system would be much more difficult to operate, especially by a veterinarian whose fee is only \$5 for three services.

I still do not know what the minimum qualifications are for a Master Farmer. I have a suspicion that J. M. Fraser could get in without hurting himself on the edges. He has served his term in public office, both as reeve of Chinguacousy Township and, a year or two ago, as Warden of the County. Others tell me that he is always ready to help out some new and worthwhile project. I am always surprised when groups of farmers put love of the land so low among the factors which help to make a good farmer. The good farmers themselves seldom admit it, but it seems to me it must be there. Moreover, I think J. M. Fraser has it, although he did not say so. He did indicate that it is developing in Jack Junior. This young man is only two years old, but he has already developed a fondness for the barns and his favorite remark in the dairy barns is "my cow."

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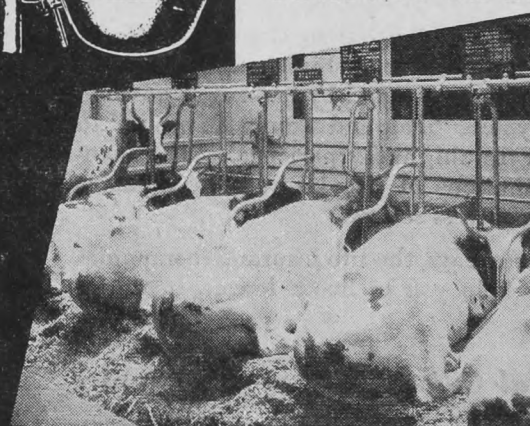


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This is only *one* of the medical projects in which the life insurance companies in Canada have a stake. Their financial aid is also helping science to win the war against infantile paralysis, heart diseases, cancer and tuberculosis . . . as well as promoting better nutrition and public health.

These, too, are long-range crusades. But, by increasing the number of skilled scientists working at these tasks . . . and by making it possible for many young "men and women in white" to get further training and experience . . . the financial contributions of life insurance companies help bring success sooner.

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A message from the Life Insurance Companies in Canada and their Representatives

LR-149

Trend And Outlook For Dairying

The trend is toward lower prices and a buyer's market

THE following paragraphs contain excerpts from addresses delivered to the annual dairy conventions in the Prairie Provinces by W. C. Cameron, Associate Director, Marketing Service, Department of Agriculture, Ottawa.

"... those goods which Canada has for export and which compete with countries of the sterling block, or countries who have devalued their currency more than Canada, are at a disadvantage as to price. It is not likely that Canadian goods will be sold at a higher price if comparable supplies are available elsewhere at lower prices, and particularly if dollars are not needed to purchase them. . . . Price will be the dominant factor in all negotiations and trading between soft and hard trading areas. A good example of this is the attitude of Great Britain with regard to the purchase of Canadian cheese and eggs. Sufficient cheese cannot yet be supplied to meet the meagre ration

cheese and butter, whereas today one-tenth of the total milk production is exported mostly in the form of cheese and evaporated milk.

"The increase in the domestic requirements of dairy products has been due not only to a growth in population but also to a greater per capita production of all dairy products. In addition new products such as ice cream and concentrated milks, which early in the century were relatively unimportant, have within recent years enjoyed a much wider and more extensive use. Today these two are prominent items of the diet of Canadians and utilize important quantities of the total production of milk. Concentrated milks are also major export dairy products.

"(Because) . . . cheese and concentrated milk constitute an important part of the world's trade in these goods . . . conditions which affect export markets have an influence on Canadian dairying as a whole . . .




The consumer is the milk producer's market. Since 1946 fluid milk consumption has decreased in Canada from 1.02 pints to .89 pints per capita per day, or 12.7 per cent.

of those in the United Kingdom, without purchases from the dollar area of the North American continent, and consequently a specified allotment of dollars has been set aside for this purpose. In the case of eggs, however, it seems that supplies can be obtained from areas where dollars are not needed to finance the purchases.

"... In order to help appraise the probable impact of present trading difficulties on dairying in Canada, it might be well to recall the gradual but more or less steady trend which has developed in the production and utilization of Canadian milk. There has been a gradual increase in the total milk production of Canada over the past 75 years or more. However, the growth of this country in population and industrialization has been at a rate greater than the increase in milk production. The result has been a gradual diversion of milk from the manufacture of butter and cheese for export, to the making of larger quantities of all dairy products for domestic use. Early in the present century approximately one-third of the total butterfat produced was exported as

"During the past ten years the total milk production in Canada utilized as fluid milk and cream has increased from about 35.3 per cent to an estimated 39 per cent during 1949. This increase has been due to growth in population and also to greater per capita consumption. The quantity of milk and cream exported during 1949 was negligible. This branch of dairying is rapidly approaching the position held by butter as being the product utilizing the largest proportion of the total milk production in Canada. There is, however, one important point in connection with the market milk branch of dairying which should not be overlooked, namely, the comparatively continuous decrease in the per capita consumption of these products. During 1945 and 1946 a peak of 1.02 pints per day was reached. Since that time the trend has been as follows: 1947—.97 pints; 1948—.90 pints; 1949—.89 pints. Due to an increase in population the total consumption of milk and cream has been greater in 1949 than in 1948 and it may be that the significance of a per capita consumption decrease of these

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products has been lost in the total sales volume increase . . . when the market for almost 40 per cent of the total milk production in Canada showed a per capita consumption increase, it warrants immediate study by the industry in order to determine the cause and possible remedy.

"ICE cream is rapidly ceasing to be considered as a luxury and is assuming its rightful position as an important food. During the past ten years the production of this dairy product has more than doubled. It now is using slightly more than two per cent of the total milk production and only relatively small quantities are exported in the form of ice cream mix.

"Concentrated milk has shown marked growth in recent years. Production has more than doubled since 1939 and domestic consumption has almost kept pace with production. It is estimated that during 1949 slightly more than four per cent of the total milk production was utilized in the manufacture of condensed, evaporated, and other dry milk and other concentrated milk products. The domestic market consumes about 75 per cent of the total and the remaining 25 per cent is exported to as many as 56 different countries.

"Concentrated milks as a group have experienced more production and marketing problems than other dairy products during 1949. The signs of weakening export outlets due to currency difficulties, which were apparent in 1948, became realities this year . . .

"Prior to the war and during the war large quantities of evaporated milk and dried milk were exported to the United Kingdom. Since 1947 the British Ministry of Food has not purchased these products from Canada.

"Cheese making is a branch of Canadian dairying through which Canada has for years exported the bulk of the milk which has been surplus to domestic requirements.

"Cheese factories opened earlier last year than usual and during every month of the year production exceeded that of the corresponding months of 1948, and the year's production was 26.9 per cent greater . . . The contract with the United Kingdom for 50 million pounds was completed by the week ending August 20 . . . (but) even with a marked diversion of milk from concentrated milks to the making of cheese, the total production of cheese last year was only 110 million pounds, the smallest since 1941 with the exception of 1945 and 1948.

"There have been a few small shipments of new cheese to the United States markets and larger amounts of mature cheese, but the total quantity exported to the United States was relatively small.

"When the British contract was completed the government, through the Dairy Products Board, bought cheese until the 31st of December on the same basis as when securing cheese to fill the British contract . . . These cheese are being held in warehouses and inspected regularly . . .

BUTTER utilizes a greater proportion of the total milk production than any other products. During 1949 it is estimated 47.5 per cent of the total milk production in Canada was used in making creamery and dairy butter . . . The preliminary report of production shows a decrease of 1.8

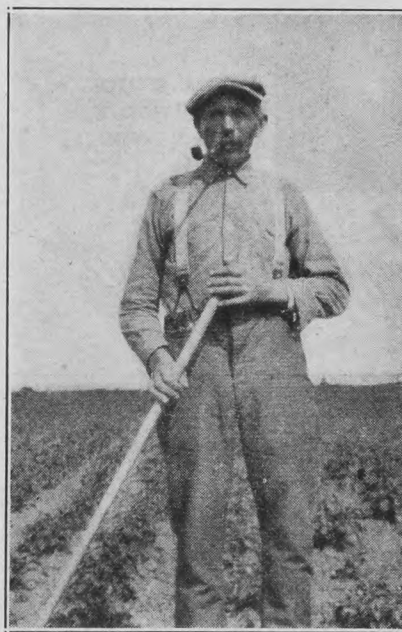
per cent as compared with that of the previous year. The quantity manufactured (279.4 million pounds) was about the same as in 1941. During the period 1941-1949 creamery butter production has fluctuated between a high of 311.7 million pounds in 1943, and a low of 271.5 million pounds in 1946. During the most of these years the butter industry was required to comply with certain measures of governmental control and it is difficult to know what the trend in production and consumption would otherwise have been. During the early part of 1949, margarine made its appearance in Canada . . . It is very difficult . . . to determine the actual decrease in distribution of butter during 1949 as compared with that of 1948. It appears, however, that it was at the rate of about 3.6 million pounds a month less. At the present time there appears to be sufficient butter in sight to meet the domestic requirements.

"For years the production of this product has been just about equal to domestic requirements and its production has been delicately balanced between a small surplus and a slight shortage. Now, with the present competition from margarine, the position of butter is more difficult to appraise. The extent to which margarine replaces butter and the ability of the industry to divert milk previously used to make butter to the manufacture of other products will determine the quantity of butter required to seek export outlets. If it should be necessary to export this product although the quantity be small it would affect the total butter production in Canada."

A Steady Worker

Bernaert Almey has worked for one man for 42 years

IT was back in 1907 that Bernaert Almey decided that Canada was the land of opportunity. He was 25 years old when he left Kneseleare, East Flanders, Belgium, and turned his eyes westward.



Bernaert Almey

The tempo of history has been rapid since, in the spring of 1908, Mr. Almey went to work for Camele Buyden on his section farm south of Swan Lake. That was 42 years ago. This relationship of employer and employee has been continued through those years without a break, and Mr. Almey, a little older but still strong, is working today on the Buyden farm.

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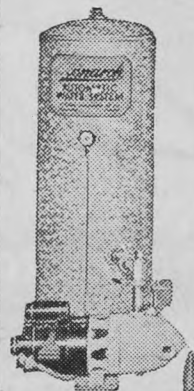
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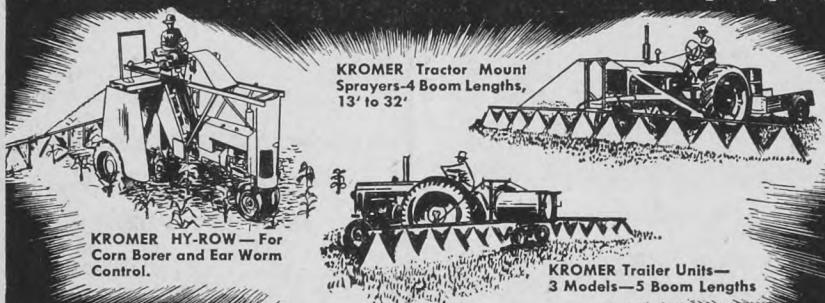


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Farmers And The Income Tax

Income tax time is coming around and a few reminders and comments should be timely

THE average farmer makes no pretense of being a businessman. For this reason many have some trouble and suffer some annoyance in the calculation of their income tax. Added to this the legislation is changed periodically, and it is not easy to keep fully informed on the latest developments. R. A. Stewart who is a member of the Income Tax Committee of the Canadian Federation of Agriculture has sent us some comments on the situation, certain points of which are important to Guide readers.

Many farmers in all likelihood failed to file appropriate returns on December 31 with payment of two-thirds of the estimated required tax, as is required by the Department of National Revenue. This regulation is reported by the Income Tax Committee as being checked fairly closely, so that if it has not been complied with the farmer concerned, if he finds himself taxable, might as well add four per cent on two-thirds of the tax since December 31.

A factor of some importance is the establishment of a basic herd, and some farmers are in doubt as to whether or not they should do so. Reports from big ranchers and from small breeders indicate wide acceptance of the procedure. There is evidence that the plan is of value to livestock breeders whether they are filing income on a cash or accrual basis. If in the latter case inventory values used are as high or higher than expected market values care should be exercised in making a change. Usually market values are higher.

There is no general deadline for filing application for a basic herd, though some special deadlines are established in the case of auction sales or the settlement of an estate. Actually January 1, 1947, is the basic date for calculating the breeding herd, so if application is to be made the sooner it can be done the better. "Basic herd" refers, of course, to numbers and not to specific animals.

ANOTHER factor that can cause some confusion is the amount of depreciation on machinery that can be charged as a cost. There was some discussion last December of changing the rates of depreciation so that there would be a higher rate in the first year of operation and a more flexible application of rates over the succeeding years. The idea behind the suggestion was that a fuller consideration of unusual depreciation due to rapid obsolescence or an accident with the machine concerned would be given. For the present farmers and fishermen are exempt from these new regulations. However an order-in-council issued on January 31, 1950, changed the old rate of 20 per cent depreciation on power driven equipment to read 15 per cent. Information on this change appears on the new guide for farmers' income tax.

"Farmers feel a bit dissatisfied over having to pay tax on patronage returns from co-operatives which have been allocated but have not been paid in cash," says Mr. Stewart. "This is a complicated question and it may be that co-operatives have not done a good enough job of informing their members why this should be necessary. If the dividend is not allocated or paid out it is taxable in the hands of the co-operative. Since each co-operative has its own problems and procedures members should be kept well informed. It is difficult to make a general statement on the matter."

The Income Tax Committee of the C.F.A. feels that the "net worth" procedure for making past assessments ignores the fact that a family works as a unit in anticipation of subsequently sharing increases in the farm values. It ignores the fact that money which has been built up over a period by joint effort would normally be shared by sons and daughters, and that when it is taxed away it introduces hardship.

One result of this income tax procedure has been a growth of interest in father-son agreements, or partnerships. If such an arrangement is not made it would doubtless be economical to pay regular wages. If the children wish to leave this money in the farm business a note should be provided to indicate indebtedness in the form of borrowed capital instead of unpaid wages. Actually farmers may now enter up to \$500 to each son and daughter for farm work done as an expense without affecting the regular dependent status of the child. This gives current recognition to the operation of the farm family unit. It does not take into account the unpaid efforts of members of the family that contributed to the building up of a farm in the past and on which a "net worth" assessment is being made.

Many problems that face a farmer when he is making up his income tax returns can be resolved by reference to the guides for farm income tax that are available at post offices or District Income Tax Offices. Assistance is also always available from officials located at the District Income Tax Office, and on occasion help is available from an inspector who sets up an office in the local town. "It has been suggested," says Mr. Stewart, "that the Department be asked to place inspectors, on the request of local farm organizations, in strategic outlying centres at stated times during March and April where farmers could seek advice and assistance comparable to that now available from an inspector working in a local post office or other suitable place.

"This service has been most helpful and appreciated and local farm organizations might carefully consider the matter and discuss it with the District Inspector."—R.O.H.



Fur Festival

Continued from page 16

To prairie dwellers The Pas always seems to be a long way north. By measurement it is in the southern half of Manitoba, 420 miles south of the border. Little wonder then that Mr. Fiddler, a musher from Churchill, felt that he was "south for the winter" after he had driven his dogs down to The Pas for the Festival—he had come over 500 miles in a southwesterly direction from his point of departure.

THE PAS and its 4,000 people create an atmosphere similar to that found in large distributing centres of the prairies when they were expanding rapidly. This is a distributing centre—distributing supplies to trappers and prospectors who cover an area of over 150,000 square miles. Grain elevators are not silhouetted against the banks of the Saskatchewan River here; fur-buying houses are their counterpart. Trading, then, is for pelts, grub-stakes and trapping supplies.

which are suitable for pulp and paper manufacturing, and are adequate to last for generations. Agriculture has possibilities, not only in the Carrot River Valley west of The Pas, but north along the Bay Line. At Mile 137 grain was seeded on May 25 and harvested on September 4. The long days caused very rapid growth and the following yields are recorded: Garnet wheat, 64.3 bushels per acre; Victory oats, 118.2 bushels and OAC barley, 106.4 bushels. Water power is available in enormous quantities; the Nelson River alone is capable of developing 2½ million horsepower at ordinary minimum flow. Wild game and fish abound, providing a sportsman's paradise as well as commercial possibilities.

Walter Johnston came down to the festival from his camp at Herb Lake. He had business to do and supplies to take back but his real objective was to see old friends and enjoy the festival. Johnston had moved north in '23 from a farm in Saskatchewan. With August Bergman, a Swede from Waboden, he had held meetings of



Wild furs, the wealth of the north. Contests of the Festival are founded on the technique of the trap line.

Development of the northland is not new. In fact traders of the Hudson's Bay Company recognized the fabulous wealth of the fur crop in the 17th century. In 1690 they sent Henry Kelsey inland from Churchill to survey the potentialities of the fur crop and encourage the Indians to bring their catch to the Company post at the mouth of the Churchill River. A cairn overlooking the Saskatchewan River and the town of The Pas commemorates this trip. It was nearly 50 years later, however, when Pierre and Louis La Verendrye, coming out from Montreal, established Fort Basquai near the present site of the town. This beginning was to develop into the "Gateway to the North."

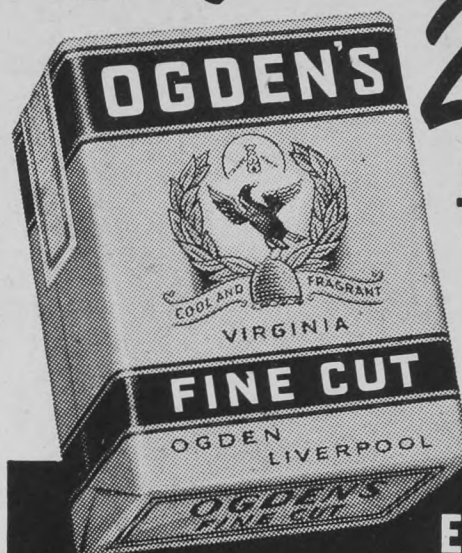
Natural resources abound in the area. Prospecting has shown the presence of iron, copper, lead, zinc, cobalt, silver, nickel and gold deposits. At various points along the Bay Line (Hudson Bay Railway), there are excellent stands of spruce timber

the trappers to discuss conservation of furs and the lack of organization or method in the industry. By 1940 they had convinced the Provincial Government of the need for control over trapping; the Department of Natural Resources called a meeting at Pik-witonei. Each trapper outlined the area he covered, drawing in the borders on a map. Disagreements between neighbors were settled arbitrarily. The result was the official registration of trap lines. To control these the authorities issued permits giving the trapper "exclusive right to trap in the area described."

The effects of registered trap lines have been far-reaching. Today the trapper treats his "farm" with an eye to future production. Breeding stock surveys are made each year and the best animals are left to reproduce. Some areas which were depleted of stock are being "summerfallowed" or trapped only sparingly.

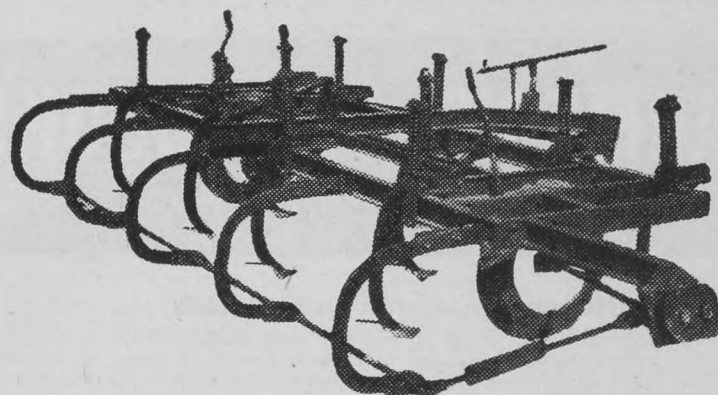
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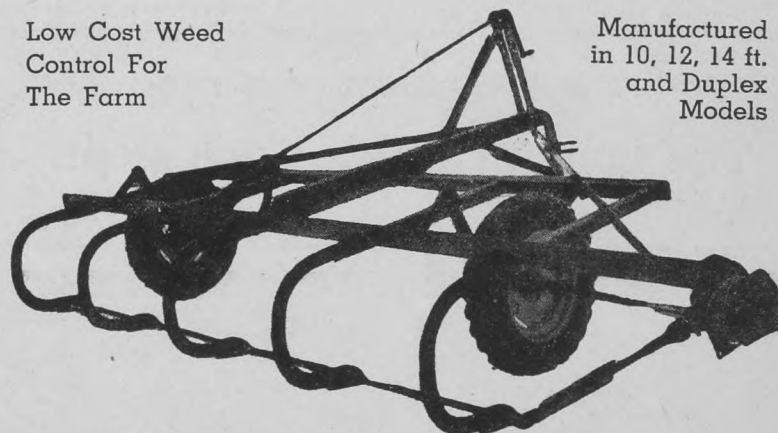
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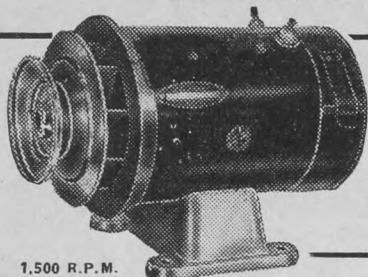
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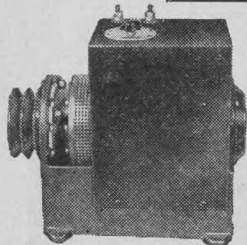
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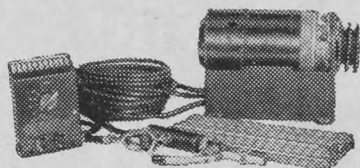
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ways. While farmers fix fences and pick rocks there are dams to be built, drainage ditches to go in, out-cabins to repair and supplies to replenish for the trap line. When this is done the trapper often moves to the closest post or settlement to enjoy "town life" until the trap line calls—usually about two weeks before "harvest."

The value of planning and conservation is shown in the following figures: In 1937-38, 8,054 beaver were taken; in 1947-48 the crop was 12,571. The corresponding numbers of muskrat pelts sold are 291,489 and 1,004,762 for the same years. In addition the populations have been built up to the

point where much larger crops can now be taken without prejudice to the future of the industry.

Canada is booming in her northlands. They are among the last frontiers of the world. Landing strips, radio communication stations, railways, roads and waterways are all being expanded. The ground work has been laid by people such as those who gathered to join in the Northern Manitoba Trappers' Festival. They have visions of great, throbbing, industrial expansion; they are the people who understand the beauty and bounty of the north.



On your mark—these Northern Huskies are ready for 144 miles of open trail.

From 2,4-D

Continued from page 13

dusting will be found quite comparable to spraying. Of the eight million acres treated in 1949 on the prairies about 90 per cent in Manitoba and Saskatchewan was by spraying, in Alberta 76 per cent. Improvements in sprayers, especially screening for low volume nozzles, has greatly facilitated this method of application which gives good weed control even when conditions are far from the ideal. More efficient pumps for filling the tank and the introduction of the comparatively simple devices that are being offered through the trade this year as "markers" should go far to overcome the objections to spraying.

Trials carried out at several universities and experimental stations over the past two or three years have pretty well cleared up when to, and when not to, treat cereals or flax crops with 2,4-D. The small grain crops are particularly sensitive to treatment at two stages: (1) from emergence until some five or six inches in height, and (2) in the advancing shot blade—wheat about 12 days before heading, barley rather closer to heading. This leaves a "safe" period and one when the weeds are best treated, from about three weeks after the crop is up until the early shot blade stage.

Whether one treats quite early within this period or late will depend on the weed species. If mostly annual weeds, the earlier the better; if perennials such as Canada or perennial sow

thistle, the later period is preferable.

Flax differs in that it may be safely treated from the time the weeds are sufficiently numerous through to the appearance of the first buds; from this point on through flowering flax is very susceptible and under no condition should be treated. While quite an uncommon practice, both cereals and flax can be treated after heading is completed or the flax has formed bolls.

DOSAGE is an important consideration in that the crop, the weeds, and the matter of cost of chemical, are all involved. In general, the dosage should be kept to the minimum sufficient, of course, to control the weeds. Manufacturers go to very considerable trouble and no little expense to supply this information both on labels and in literature made available to the users. The third Western Weed Control Conference summarized the recommended dosages in the table below.

In applying this table a number of factors must be considered which again the conference drew up, as follows:

Stage of weed growth—in general, plants are more susceptible when young, that is, in seedling or rosette growth stages, resistance increasing as they approach maturity.

Rapid growth—plants are usually more susceptible to 2,4-D when growth is rapid.

Moisture—adequate soil moisture assists the action of 2,4-D.

| Type of Weed and Reaction to 2,4-D. | Formulation | Cereals Flax | |
|---|----------------|----------------------|-------------------|
| | | Ounces Acid per Acre | |
| Annual Weeds (Susceptible) | Amine Ester | 3½ to 7 3 to 5 | 3 to 5 2½ to 4 |
| Annual Weeds (Intermediate) | Amine Ester | 5 to 10 4 to 8 | 4 to 7 3 to 5 |
| Perennial Weeds (Top Growth Control) | Amine Ester | 5 to 10 4 to 8 | 4 to 7 3 to 5 |

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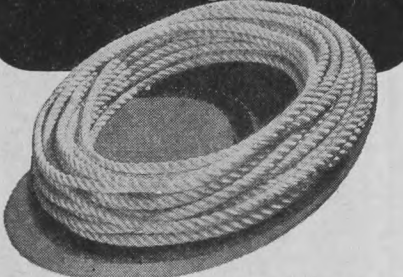
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Species of weed — various weeds react differently to 2,4-D.

Except for the grass type of weeds — wild oats and foxtails — which are resistant to 2,4-D, most annual weeds, especially when in the young seedling stage, are readily killed by relatively light dosages of the chemical. As the weeds advance in age, and especially under adverse growing conditions, resistance develops and dosage requires to be stepped up. Within the group of annual weeds there will be found the occasional weed species, buckwheat in particular, that may not be killed, but its growth seriously retarded to a point where little seed is set.

PERENNIAL weeds differ in that they are generally much more tolerant to 2,4-D; their top growth may be killed back while little or no damage is done to the root system. If such weeds, before treating, are allowed to reach the stage where the flower stems are beginning to shoot up or the buds are forming, regrowth is less rapid and good control of the weed is obtained in the crop. The writer has seen many fields badly polluted with thistles, almost freed of this weed even though the root system remained undamaged.

Dosage of 2,4-D to control perennial weeds in crops should be stepped up to the maximum the crop will tolerate. At times a little damage to the crop at the expense of eliminating the weeds is permissible. There may be times when a growing crop may be treated twice with 2,4-D to advantage: quite early with a very low dosage to destroy a heavy growth of annuals such as wild mustard; then again in early shot blade or after heading to eliminate thistles, in which case the dosage would be "upped."

Control or eradication of perennial weeds other than in growing crops by use of 2,4-D has often proven disappointing. From trials conducted in 1948-49 near Portage la Prairie where sow thistle was in active competition with brome grass, almost complete eradication was obtained in one treatment in the early bud stage, with around one pound of acid per acre. Even Canada thistle can be greatly reduced in stand when treated under these conditions. As time goes on more attention will be given to trials in which tillage and 2,4-D are used in combination or alternately.

There is considerable interest in the recently introduced chemical TCA for the control of quack grass. Quite extensive experiments in both Canada and the United States would indicate that this product has promise. When the amount required per acre, and the cost are considered, its use at present would seem confined to treating small and scattered patches rather than any acreage. Findings of the Weed Conferences were about as follows: TCA applied as a spray from 80 to 100 pounds acid per acre for spot treatment on established stands is giving promising indications of control of quack or twitch grass. Lower dosages

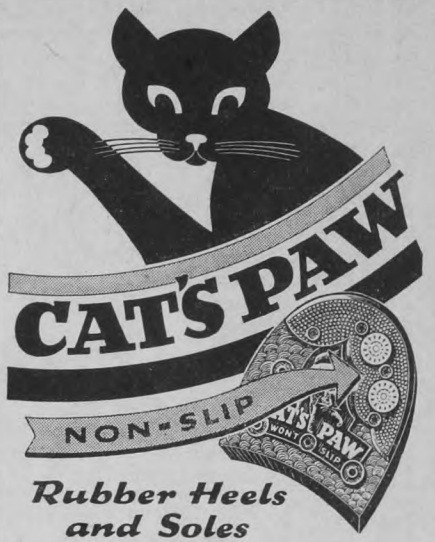
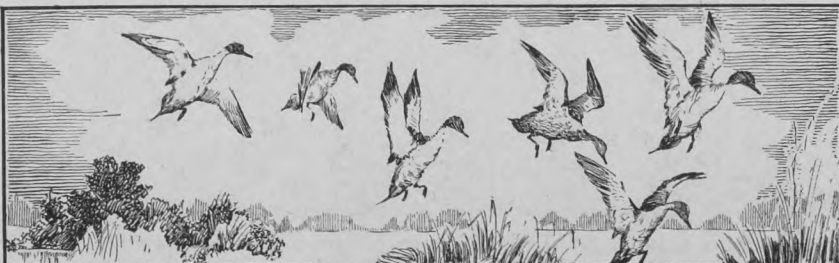
while reducing the stand fail to eradicate the weed. Smaller amounts of TCA have been used successfully in conjunction with plowing or disking of the soil. One procedure is to plow the land two to four weeks after the chemical is applied. Another is shallow plowing followed immediately by spraying. For such use, 40 to 50 pounds TCA per acre are suggested. Residual toxicity from TCA sometimes disappears in a few weeks but may persist for one year or longer. Crop susceptibility varies and extensive studies are needed.

How to keep roadways, power and telephone lines, drainage and irrigation ditches free of brush and trees has been a baffling problem. Even where men could be hired to cut such growth the operation was costly, with the job having to be redone a few years later. While perhaps not the complete answer, the use of 2,4-D and its companion chemical 2,4,5-T offer great promise, and appear to be the second wide use the hormone chemicals may be put to. For three years in Manitoba the Drainage Maintenance Board has by means of a turbine successfully treated several hundreds of miles of ditches from which willows have been almost completely eradicated with a single treatment. The cost has been only a fraction of hand cutting.

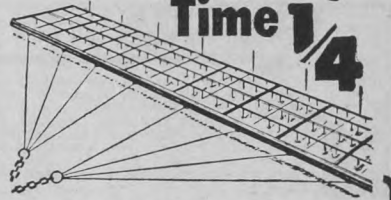
LAST year the Power Commission and the Highways Branch, as well as some thirty municipalities, took up this method of combating the woody growth problem. Pastures and range land infested with buck brush and other scrub and tree growth comes within the scope of such treatment, and along with a grass rehabilitation program should be greatly improved in stock-carrying capacity.

As in the case of weeds, woody growth shows much variation in resistance to these chemicals. Willows and Manitoba maples are very susceptible to 2,4-D, while ash and oak are resistant to both chemicals. Wild roses, while resistant to 2,4-D, are readily killed with 2,4,5-T. The Weed Conferences summarized the findings, as follows: The ester formulation of 2,4-D is proving effective in killing susceptible woody growth. The use of 2,4,5-T is advantageous when woody growth consists of species resistant to 2,4-D but susceptible to 2,4,5-T. One to two pounds acid per acre of these chemicals, singly or in combination, depending upon height and density of growth, should be used with 25 to 80 gallons of water (or one-fifth of one per cent). Very low volume (four to five gallons) as used on crops does not give sufficient coverage except where growth is quite short.

High concentrations (two per cent) of 2,4-D or 2,4,5-T in oil applied to surfaces of stumps and canes cut as closely as possible to ground level will kill some shrubs and trees that are tolerant to foliage sprays of 2,4-D. This treatment may be used at any season of the year.



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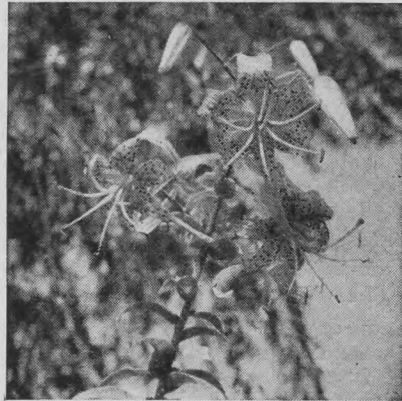
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Transplanting From The Wild

Helen Urchit, Kamloops, B.C., has gained some very nice effects with wild flowers transplanted into flower beds

FOR those of you who are fortunate enough to possess a flower garden, you will know and believe the saying that the joy of planting is surpassed only by the joy of harvesting. And to those who revel in the unique and unusual, there is awaiting you the joy of introducing wild flowers into your domestic garden. Material requirements are prac-



A wild tiger lily in brilliant bloom in the Urchit garden.

tically nil, except for a small garden trowel, a cloudy day and a little initiative.

In this case the initiative is the force which urges you to replace the Sunday-afternoon nap with an early spring trip to the woods. Take a camera along on your "shopping" trip, to snap pictures of the flowers before you dig them up. Keep them for comparison to the ones you will take later of the plants among the tames ones in your own garden. I suggest you take with you also a suitable container with a handle, so you can conveniently and safely carry the plants home. If the roots are badly disturbed or broken, blooming is likely to be interrupted or altogether lost, at least for the first season.

Abundant in most localities are the charming and easy-to-grow violets. Carefully dig up the hardy little plants when in bloom, transplant without disturbing the roots and you are assured a continuous bloom season after season. Try using the white or

purple varieties as a cooling ground-cover for the "Regal" lily. The stunning effect will startle you.

Bulbs are every bit as easy to transplant and in some cases are even more effective. You've missed a good deal if you have never seen a spreading pink patch of "Lady's Slippers" blooming amidst patches of dirty, late spring snow. And they are yours for the transplanting. They require a peaty soil and shade, so work in some peat, perhaps around the shady side of the house where nothing else will survive. The most common ones are pink, although with a little diligent searching you may be able to secure some exotic-looking brown-and-white ones.

The early gold "Johnny-Jump-Up and purple "Mission Bells" are the bulbs which should be planted facing the open sun. Unlike "Lady's Slippers" they prefer a rather poor soil.

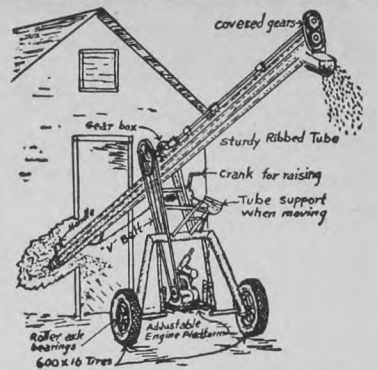
My most successful attempt resulted in a beautiful expensive-looking clump of wild "Tiger" lilies. The bulbs, sporting numerous red-orange flowers burning in full bloom, were transplanted to a corner in the garden where they continued to bloom for two or three weeks. They have remained undisturbed for three years, and each year since have produced a large, splendid display.

Your garden need not be large to accommodate the adopted wild flowers. A large number of dwarf plants can be used as ground covers for taller plants, filling the naked spaces between the stalks. And space or no, try removing the turf next to the steps or in a bare, out-of-the-way place, replace with suitable soil and pop in the desired plant. It works wonders in a desolate-looking spot.

The varieties and blooming time vary, of course, with the locality, but there are few places in Canada where some plant or other does not bloom from last to first snows. The majority of wildlings can be easily re-established, but every precaution should be taken to match the soil, moisture, shade or sun where the plant originally thrived.—Helen Urchit.



Picnics are a popular feature with young farmers' clubs in England. This one is at Minsal Dale, Derbyshire.



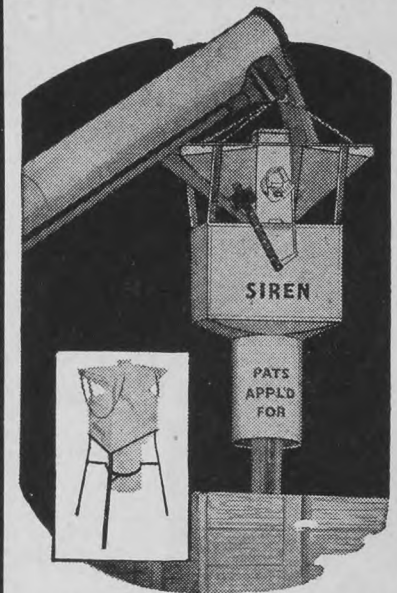
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The Odyssey

Continued from page 18

He was not to be spurned, however. Here was one of his own kind; not the answer to his restless dreams, yet grunt, growl and whisker, a most admirable old devil. He fell in behind, content to dog the other's footsteps, sensing the promise of adventure and romance in store.

He was right. The old one was the goods, an experienced coon-about-swamp, and no better guide or mentor could have been found. He covered the swamp in a great five-mile circle that afternoon, and in four hours Young Specs learned more than he had in all the rest of his life put together. Hitherto hunting to him had been limited to the innocent pastime of scooping frogs out of the marshy pools. He had tasted scarcely anything in the way of solid nourishment since he had unholed, believing the winter woods devoid of food. But the old coon knew a dozen handy wrinkles. He visited every dead or hollow tree



in the swamp. Coon-stations, these were, over a century old, places where news was to be gathered. Into a hole in one of these he rammed an arm into the shoulder and rifled a squirrel's nest of a sleepy, half-grown youngster.

ON the edge of the swamp he tarried a long time on a rush-grown bank that was literally honey-combed with wood-mouse runways. Here a fellow had only to sit and wait until dinner ran into one's paws, course by course. Young Specs naturally followed on his own, about a dozen feet away. In his absorption he failed to keep a weather eye out and the old coon was suddenly on him tooth and claw, before he had even time to throw himself on his back in the defensive stance of his kind. He was bitten and mauled and driven whining into the thickets, but circled back undampened to follow until night.

Next day he was hanging about waiting when the old one appeared. He followed again at a safe distance and that day learned what coons were made for. The old boar it appeared was no very nice character and Young Specs was initiated into the high-handed ways of a real freebooter. Toward dusk the old one stole by circuitous ways to a lonely backwoods farm. Time and again he turned and threatened the youngster with mayhem and worse, but Specs could not have turned back if he would. He had been born to take part in just such reckless forays as this. It was his heritage and he knew it with every

drop of blood within him. He knew the danger that threatened yet he followed even closer as the old highwayman slipped beneath the rail fence. He heard subdued squawks from a hen roost somewhat later and then the roar of a dog, and it was as if he had done it all himself a dozen times before.

He was waiting when the boar rushed desperately into the woods with a plump hen dangling from his jaws, and he fell in alongside, eager to fight it out with the other as long as allowed. The dog luckily had been chained, but very shortly they were surprised that he was loose. No water in March in which to lose their trails, and snow would not do. So they fled, backs humping like measuring worms, thick fur rolling, time too pressing even for the old one to snarl at Young Specs' presence.

The dog was no coon hound. His yapping bluster gave him away as a tyro. He was dangerous all the same, coming fast, with the farmer probably behind him. The old one waited until the last minute before stuffing his kill in a hole beneath a tree root. Specs thought they were taking to the trees for safety as he scratched his way after the other up the trunk of an ancient maple, but the boar halted on the lowest branch for the dog to come up.

Without an instant's hesitation he launched himself at the back of the mongrel as he came beneath the tree. He struck true, gripping with all four claws, and the dog howled with fright and consternation at the suddenness of the thing. Specs launched himself downward too, his belly thumping the hard ground for his pains.

Then was seen what a terrible fighting machine an experienced old raccoon can be. The dog was twice the size and weight of the coon, yet in science the coon was his master at every turn. No animal in the world can take so much punishment with apparently so little pain as a coon, for his hide is incredibly tough and thick and not a joint of him is rigid. Each time the mongrel appeared to get a killing grip, the coon slipped the hold by turning within his heavy, loose hide which seemed made for just such a purpose.

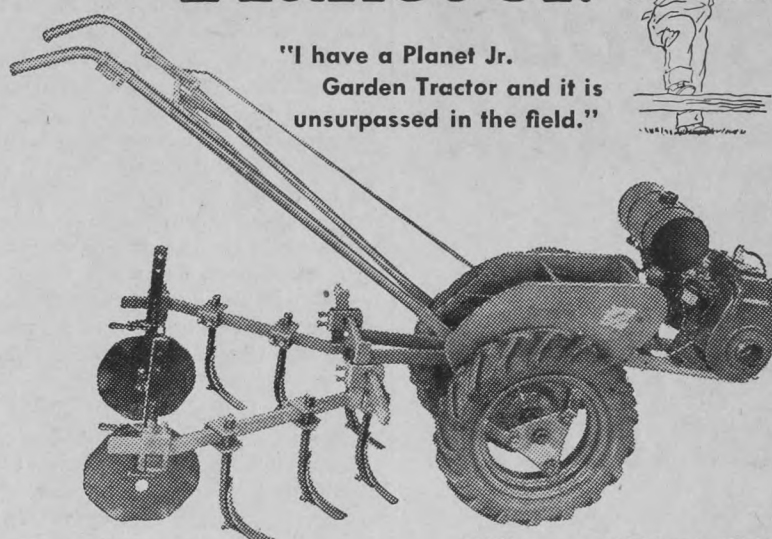
Back and forth they threshed, Young Specs dancing about them in a frenzy. They broke apart at last and Specs flung himself into the breach, eager to do all a youngster could to help the old filibuster. He got in one bite and was seized by the neck and shaken like a muff. The old one saved him from being shredded to bits.

The farmer had not followed the dog and within two minutes the mongrel had had more than enough of the affair. With a dozen slashes in his hide, and the old coon riding his shoulders like a fiery leech, he finally beat a yelping retreat.

LATER in the swart shadows among the tamaracks, Young Specs sat within three feet of the old coon as he ate. He was even allowed to mumble over a discarded wing of the hen and clog his mouth with feathers. Apparently he had not been found wholly wanting, for the old one did not snarl at him again that night.

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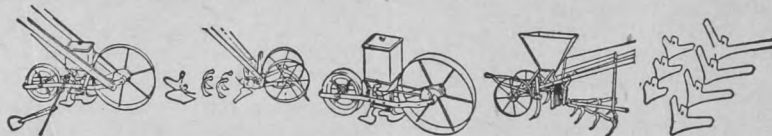
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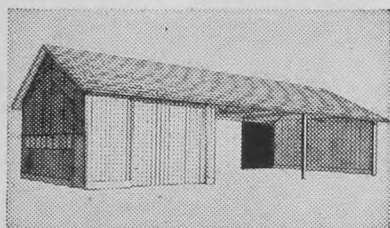


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greening swamp woods were populous with all manner of coons. And all manner of other creatures, too, all intent on the sweet and secret errands of spring.

The oversize moon they kept in those parts to light love on its way was a spell-binder, and Young Specs recalled what had gotten him out of bed at least two weeks early. He prowled and prowled, by night and by day, knowing only that he must see what lay behind the ranges. What he looked for was not clear, but it did not concern even the old coon by whose side he had fought. Everyone else seemed to know, however; the woods and the very air were prescient with it. The polygamous rabbits knew; Rufa the dog-fox smiled it at him as he slipped swiftly after his coy red vixen, and the profane and drossy squirrels sitting in their knot-hole doorways, barked to the world at large that Young Specs, the dumbest of the dumb, who didn't even know what it was all about, was passing on his silly lonely way.

Still, it was three whole months before Specs found an answer to it all. She was a small, capacious creature with a cunning, pointed mask and bright, knowing eyes. She had ideas that leaned toward feminism and there was disdain in her dainty, picking gait. Older than Specs and wedded before, she led him a chase that was not at all merry before condescending to set up den-keeping. But like all her kind she made life spicy. There was no peace around her, but there were short blissful periods of delight that seemed to more than make up for dire discord.

WITH the coming of late summer the raccoons of the region began to band together by common accord, for fall is the high time for coons. The young birds were gone and the frogs, the mussels, the turtle-eggs and most of the other gastronomic delights of the swamp. But there was a rich, milky corn to be had in the fields of the settlers, to say nothing of young chicken. By the trial and error method Young Specs had mastered all the facts of life that summer; he had proved his mettle. So now he took his place as a proper coon among the big and coonly coons of the swamp.

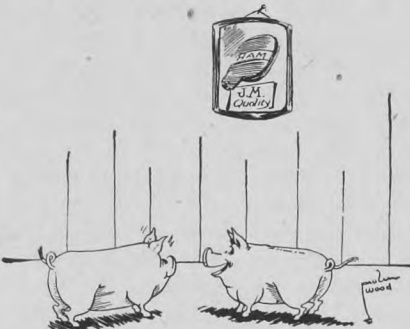
Followed two parlous months of pillage and depredation in which the coon gang of nearly a dozen went forty-nining about the countryside, deviling the dogs of the district and racking their wily brains for new ways of scotching the farmers. Those were the nights! Most of the coons in the band were shrewd, battle-scarred old veterans; all of them born with the hatred of dogs in their blood. They were born strategists, too, practicing banditry not merely to eat but for the love of the game itself, despite all the dry textbooks tell you about it.

Nightly they raided farmyards and hen-roosts; tore down standing corn and climbed orchard trees to fling down hundreds of apples and persimmons they never ate. As the Hunter's Moon of October began to ride high in the sky a peculiar madness possessed the coons, akin to that which possessed the game birds of the forest. From dusk to dawn they prowled and the more danger attached to their raids the better they loved it.

One frosty night they engineered a nine-foot tunnel and got into the well-stocked cellar of Old Deacon

Soames, a rich farmer, while the Deacon's chained dog yapped and raved but twenty feet away. He was too used to yapping at the moon, that dog, so nobody paid any attention to him for some time. In the first grey of dawn, the Deacon himself looked out of an upstairs window and saw a whole line of coons emerging from the tunnels, loaded down with chunks of salt pork, bacon and barreled eel.

Staunch church-member that he was, the Deacon's language as he



"That's my mother-in-law, of course that was taken after she had taken the 'cure'. No question but what it improved her looks!"

rushed downstairs in his nightshirt, almost brought on another hot spell. In the dark he could not locate a gun, so he rushed outdoors yelling like a banshee. As he did so he saw the last coon just emerging from the tunnel with half a side of bacon in his jaws. That coon happened to be Specs himself. The Deacon flung himself bodily at him, gripping both hands back of the thief's head in an endeavor to hold him down. But as long as Specs could get traction with his four feet on the ground, he was able to drag the old man along. Notably a tight-fisted man, the Deacon hung on and as he was not overly large he was carried bodily, nightshirt and all, for sixty-five feet by actual count into the frost-rimmed, treble-welted blackness of the pine woods before he let go.

The Deacon got his bacon back, but the coon got away, not, however, before he had been identified once and for all by his spectacles. This incident when related next morning at Hod Archer's store was the cause of the biggest coon hunt of the entire season which took place that night. The Deacon was there with his scatter-brained hound, and Hod Archer and old Sol Wire, Doc Eastman and the Ballard boys with their two famous coon dogs, both faultless trackers, with no bay. That hunt lasted until nearly dawn. Two coons were treed and done to death, and one of them was the grand old boar who had been Specs' initiator. Special luck



"I guess it's got something to do with promoting goodwill."

attended Specs himself that night. He had sought his hollow tree by an arboreal overhead route at the first far sound of the dogs and lain quivering while the world went howling past.

Not long after this fall passed on; a north wind arose one night and morning found the forest white with snow. Specs sought his old bivouac in the ancient oak. His mate had disappeared two days before, and so had most of the other coons in the swamp. He did not know where they had gone, and he did not care. The torpor of approaching hibernation was heavy upon him and he would not have pulled the head of the choicest young pullet had it run straight into his paws.

That year Specs overslept. In fact, it was an urgent bite from his mate that finally aroused him. She had come in search of him, bringing her sheaves with her—four tiny coons, each with an erudite pair of spectacles on his nose, diminutive replicas of Specs himself. Specs wasn't particularly impressed, but as time went on and it became evident that they were inexorably attached to his days and ways, the frailties of fatherhood had their way with him.

That summer Specs' education reached its ictus. He fought his fights with relish and dispatch. No flies settled on him now, nor did anyone knock any chips off his shoulder and get away with it. He was a mature coon now of really remarkable size: twenty-five pounds in weight and nearly three feet long. Few boars could stand against him. Fatherhood wrought in him an inner maturity to match the outer. His family trailing at his heels was a miniature gang for which he was responsible, and he grew shrewd with the duties of leadership.

MOST of Specs' strategy came to him instinctively out of the massed wisdom of his kind, who had established the original coon-stations in these woods, practiced their banditry and died under the fangs of dogs and wolves for centuries. But there were other things that he learned through his own boldness and the deathless curiosity that is the heritage of all coons.

It was that year that he earned his name in the countryside. One late afternoon he was cornered in Hod Archer's barn, a big hogshead was thrown over him and a stout timber braced between it and the barn roof to hold him in till Hod went to fetch some friends and their dogs. There is a set and ancient etiquette to coon hunting throughout the South, and the law is that only the dogs must do the killing. Even among the "pinys" and poor whites this rule is rarely broken. Guns are used only to force a treed coon to come down and meet the dogs. Hod wanted more dogs, and a friend or two to share the tableau of battle with him.

But when the men returned two hours later, the timber had fallen and Specs had tunneled to freedom. This Houdini-like performance made him quite notorious. Deacon Soames' story the fall before of a big spectacled coon had been taken with a portion of salt, but the testimony of Hod Archer in broad daylight, was a different matter. The very next day Doc Eastman saw the big spectacled coon in his back woodlot and it was

the Doc who named him. Old Specs, not Young Specs, for he was a mature coon now.

HIS identity once out, competition grew keen throughout the region. Half a dozen hunters vowed they would bring in the pelt of the spectacled marauder. But Specs lived for competition almost as much as he lived for eating. He seemed to relish the fact that the settlers were on the hunt for him, and went out of his way to write his name in red across the countryside.

His trailing family became a sore handicap, but coons are the best parents in the forest world. Specs' responsibility could not be shirked until the most backward of his youngsters had learned the tricks of the woods: to frog, to mouse, to birds-egg; to wash his food and his trail in water.

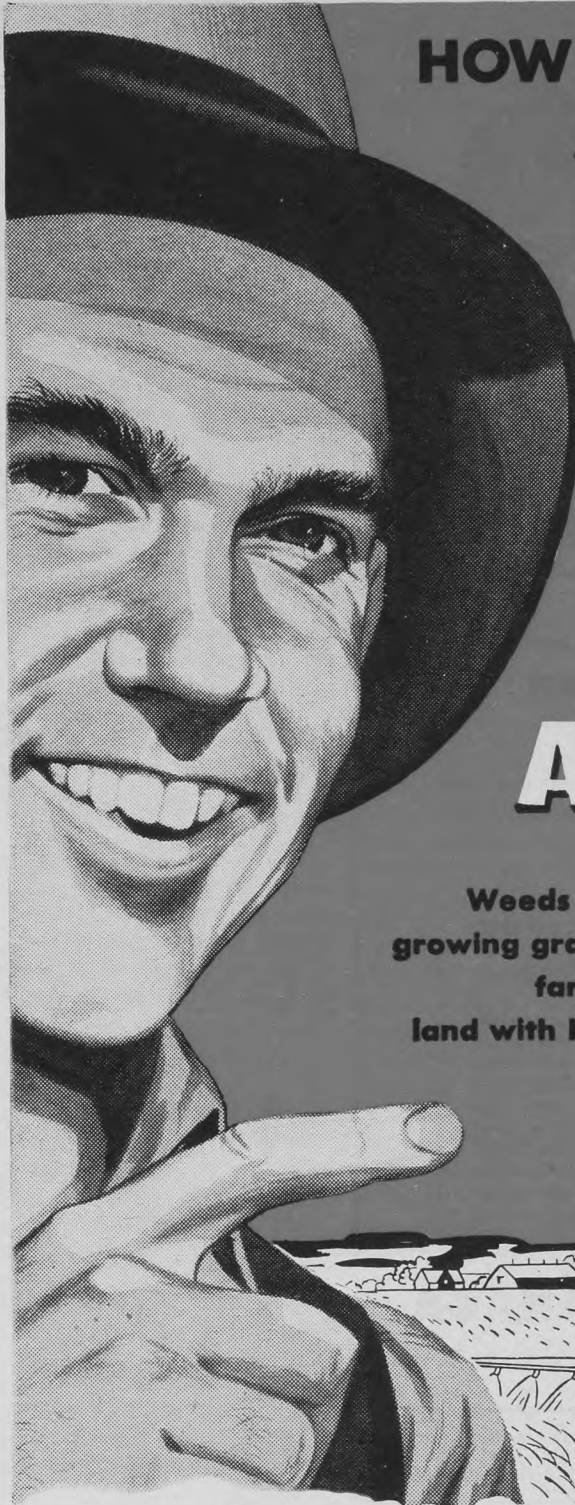
One moonlight night in fall not long before the family was ready to graduate and go their ways, the parents nearly lost their lives through their loyalty. The youngsters were being initiated in their first chicken raid when two dogs winded them. Across corn fields the family fled, only to be apprised by a baying chorus that a big coon hunt was in progress in the swamp woods. The hunt was between them and the safety of home, so the coons turned toward the river. Within five minutes the worst had happened, the mongrels' bluster had drawn the entire coon pack on their trail.

Long before they could gain the river the trained pack were hot on their trail. Spurred on by the farm dogs, they were coming fast, directed, Specs knew, by the hunters behind. If the family scattered, the youngsters would inevitably be overtaken and killed by the dogs. If they kept together they would be treed and most of them would perish. Specs waited until the last minute, then turned back to carry out the immemorial code that male coons have kept for centuries. He would face the pack alone and hold them off till the family could lose their trails in the river.

As the first of the dogs, a big liver-and-black hound came rushing up, a black-masked form hurled itself out of the thickets and wrapped itself about his neck and head like a deadly hood. Specs had learned well the lesson swift and fierce offensive. The very surprise of the thing turned the bound's bluster to a yelp of dismay. Dirk-like teeth met in the nape of his neck and one of his silky ears was torn to ribbons before he broke away. Then the entire pack of five swept up, voicing the short frenzied yaps that meant quarry sighted.

The odds against Specs were overwhelming and no slightest quarter could be expected, yet he did not hesitate. The hard, dilated pupils of his eyes shone like phosphor as he flung himself into their midst, sounding the harsh churring battle cry of his kind. For a minute thereafter, nothing was visible but a whirling, heaving wave of dogs, nose-hubbed. Then the wave broke and the big raccoon, still unimpaired, upreared boxing like a young bear just as the four hunters came up: Deacon Soames, Doc Eastman and the two Ballard boys, carrying a lantern.

The Deacon had never forgiven the belittlement of that night the year before. As the light showed up the



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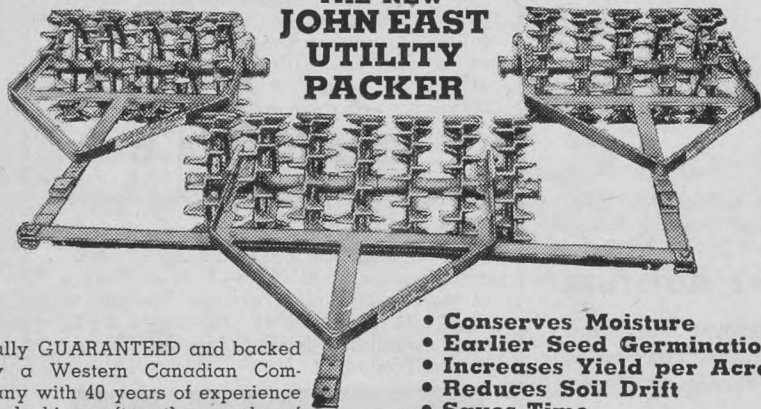
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coon's spectacled face he raised his old rifle, his white beard jerking viciously as he took aim. The law of the coon hunt might have been broken that night had not Doc Eastman jerked the gun aside.

"Let be, Deacon," said the Doc firmly, "The odds are seven to one in favor of the dogs. If they can't get him, they're a bunch of poor pickle hounds." Then all four men stood staring dumbly, gripped by the biggest thing in fights they had seen in years.

Specs' tactics were like those of a skilled boxer in a street fight. He was as hard to hold down as quicksilver and again and again he broke seemingly fatal holds by slipping imperceptibly within his loose hide. Making desperate dashes here and there to avoid being surrounded, he finally got his back up against a phalanx of thorny greenbrier where the dogs had to come to him one or two at a time. Within a minute thereafter two of the pack backed away howling, with necks gashed by the coon's razor-edged claws and forefeet bitten clean through.

Before the dogs could rally to another concerted attack, Specs in a series of well-planned rushes gained another hundred feet in the direction of the river, with dogs snapping at his head, at his back and both flanks.



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Low to the ground and perfectly balanced, he ducked, backed and side-stepped with a science and speed no dog could equal. The blackness of the thickets was all in his favor and dog bit dog without knowing it in the mad melee. When the men caught up with their lanterns again they found the coon locked jowl to throat with Baldy, the Ballard's hound and the moving spirit of the pack. As the two of them threshed and rolled, Specs wrapped himself about the dog's neck and head, working dark diableries on the windpipe with his black prying fingers and when Baldy finally dragged himself into the bushes, it was to stay.

STILL silent, dogged, and terribly efficient, Specs closed with another dog, taking bite after bite from the worrying pack in order to gain the hold he wanted with his forty fighting teeth. The lantern was upset in the flurry and when it was lit again the dog limped to the feet of his master with a broken paw and throat terribly gashed, while the fight went crashing away through the thickets.

Only four dogs left now and none of them had the stomach to face Specs squarely. With flashing, crafty, imperceptible movements, the big coon avoided time and again the con-

certed snaps and rushes of the dogs, while he led the skirmishing discreetly and continually toward the river. He was bleeding from a dozen wounds, his bitten pads leaving a trail of red behind him, when he made a final stand with his back against a great tree.

ONLY a hundred feet now between him and the water. Once there the odds would be all in his favor. The dogs didn't realize, but the men did. They came running and shouting now, trying to cut him off from the stream. But Specs had recovered his wind by then and wily fighter that he was, pulled a surprise charge instead of a retreat. His thick coat bristling all over until he seemed to double his size, and a dog hanging on to his scut of a tail, he dashed between the long legs of Stan Ballard and so on down the river bank to the water. In vain the men tried to rally the dogs to another concerted stand, but all except the Ballard coon-hound Lucy, had had enough. When Specs dove into the stream, Lucy jumped in after, wild with killing fury, for Baldy had been her mate. Specs knew just what to do. He had never done this particular trick before, but as he waited in the water he knew as if he had always done the thing.

From the shore the men called peremptorily, but Lucy did not heed. As she swam up and closed with him again, Specs whirled about, climbed upon her head and clamped his four paws about her neck, rode her down. She swam and struggled valiantly, but her efforts only succeeded in driving her deeper and deeper.

Specs sank with her, his black fingers working on her jowl and windpipe. Lucy did not come up again, for paws had no chance against hands. Besides a coon can stay under water for nearly five minutes without harm, while few dogs can survive two.

Finally from the opposite shore the waiting men heard Specs bark triumphantly as he climbed the bank.

"That's him," said Doc Eastman. "But what's become of the dog?"

"I reckon," said Stan Ballard glumly, "we'll find what's left of Lucy floatin' in the lower crick tomorrow. Next time I let a dog of mine in the water with a coon, I don't!"

Doc Eastman produced a consoling flask. "Two dogs out o' business and two dogs killed, out of seven—and only one coon," he said. "Boys, I reckon none of us'll ever live to see a fight like that again. Why, I don't know as we ought to even tell about it. They'll just think us all a lot bigger liars than we are. None of us would believe the thing ourselves, if we heard it." The Doc's usual drawing voice had risen several octaves as he spoke.

Later, they all trudged homeward, the remaining dogs following limply, Steve Ballard spoke. "I'm sort o' glad he got away. I don't know but mebbe I wish nobody ever does hang up Old Specs' hide. Sort of a credit to these woods, he is."

But Specs himself was neither concerned nor curious about the praise of men. His battle had marked the end of his family duties, and that very night with his many honorable wounds in evidence, he attended the big fall conclave of coons, in the swamp and took his rightful place as the moving spirit of the gang.

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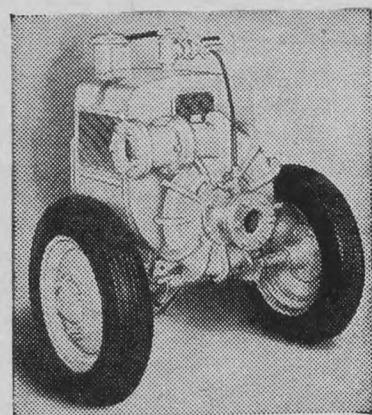
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The British Food Contracts

Ourselves as others see us. The food export contracts reviewed in The London Economist by its Ottawa correspondent

FOR ten years Canadian agriculture has flourished on government contracts with the United Kingdom. When Britain's wartime supplies from Europe were cut off Canada became the nearest source of food and many other sorts of necessities. The Canadian farmer was faced with a challenge to produce the things Britain needed, whether they were the things he was accustomed to growing or not. The prairie farmers started keeping pigs as they had never done before. The dairy farmers turned out cheese and dried milk and eggs in record quantities. Canada did indeed make great and successful efforts to meet Britain's needs, and payments difficulties were never allowed to stand in the way.

Financially the taxpayer carried the chief burden through loans and mutual aid. The farmers' contribution was in effort and energy. Farm incomes reached higher levels than ever before. Hundreds of farmers cleared off mortgages and debts, and many of them now face the postwar world with up-to-date equipment, buildings in good repair and more prosperous than they ever remember. They have also enjoyed high hopes. Again and again their leaders have assured them that Britain provided a secure market, and that their chance of stability lay in long-term contracts with the United Kingdom. These hopes were shaken but not destroyed at the end of each postwar year, when the time came to renew the food contracts. The 1949 experience has virtually killed them.

TWO things seem to have ended the ten-year period of stability for the farmer—the restoration of European suppliers to full production, and the dollar shortage. It is impossible to distinguish the effects of these two causes. On the one hand it is obvious that, as Denmark and the Netherlands and other European countries got back on their feet, they would look for a resumption of their prewar market in Britain. Even if dollars had not been involved, Britain could not have spurned them for the sake of the Canadian farmer without hindering European recovery and contradicting the aims of the European Recovery Program. This argument has never been clearly presented to Canada and perhaps would not have made much appeal if it had. Nor have Britain's postwar purchases usually been compared with prewar days. By that comparison they compare very well in volume—let alone price. But Canadians have tended to compare them with the wartime peaks, and of course they have fallen below that level.

Even the explanation that Britain had no dollars has been accepted very slowly, partly because of British policy. In the annual negotiations over each of the last three years the British representatives started by saying that Britain could not afford more than so much. But each time, after a good deal of bickering, the British Government—and responsibility is with Ministers rather than civil servants—has finally expanded its supposed "maximum" figure. When Whitehall said it had x dollars to spend, Canadians began to think this meant x plus y, and y was the extra to be got by tough

bargaining. In the days when Mr. Hugh Dalton was Chancellor of the Exchequer, days to which Mr. Gardiner, the Minister of Agriculture, looks back with avowed regret, the bargaining did not even have to be too tough. Mr. Dalton was not good at saying no. But even since then the maximum dollar allocation has been surprisingly flexible. As late as May 1949, a month before Canada's general election, Mr. C. D. Howe, the Minister of Trade and Commerce, was able to go to London and draw forth an extra \$20 million to buy some embarrassing surpluses which might have meant election trouble.

December 1949, at last changed all that. The British stated their maximum expenditure, and to everybody's surprise they stuck to it very closely. The weeks of negotiation produced no more than an agreement to spread the total expenditure more widely over some additional commodities. The British at one time even sprang a surprise by suggesting that the time had come to abandon contract buying. After a closer look they agreed to contracts for bacon and cheese in 1950, but there is still a strong impression that these will be the last food contracts between the British and Canadian Governments.

One of the awkward things about the Canadian food contracts is that they were based on a calendar year, while Britain's dollar budgeting has to be based on the ECA year from June to June. Commitments for the second half of each year have, therefore, meant allocating dollars for a period for which there were no firm estimates either of other expenditure or of receipts (whether from ECA or dollar trade).

The British Government approached the 1950 negotiations with a total of about \$600 million (U.S.) for purchases in Canada for the ECA year 1949-50. Deducting what had been spent or committed in 1949, and allowing for metals (which are a "must") and wheat (which is under contract until the end of July and is still needed after that), there was nothing left except \$25 million (U.S.) for cheese, of which the Ministry of Food needs 110 million pounds from North America to maintain the ration in 1950. The Canadian price is below the American price, though it is still far above New Zealand's or Australia's; and Britain would like to take all it can get from Canada subject to a fair price settlement.

Eventually the negotiators fixed their attention on wheat, and it turned out that Britain had rather higher stocks than it needed, having agreed at the Washington talks in September to take some of the American surplus (largely as a sop to the farm lobby to permit the use of ECA funds to buy Canadian wheat). Wheat is not an immediate anxiety to Canada. Eager buyers are being found for all that is left over and above the British contract; and after the end of July the International Wheat Agreement guarantees sale of 203 million bushels. If it has to be invoked Canada can only demand the minimum price of \$1.50 (U.S.), but present prospects are that the 1950 crop at least will command a better price.



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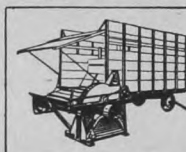
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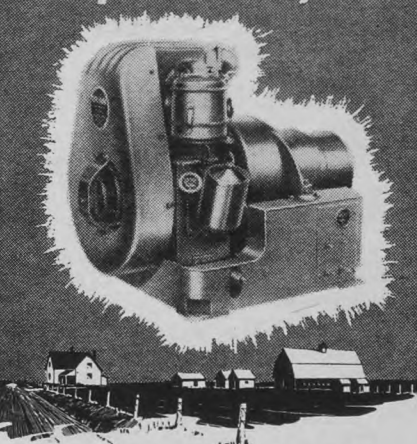


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A price of 32½¢ to the farmer has been fixed by the Canadian Government for bacon, but according to the contract just signed, it will only get 29¢ from the British Government instead of 36¢, as last year. The contract will be for about 60 million pounds, and the government wants to collect this as early in the year as possible because it intends to open the United States border, which has been closed to pork products, at a suitable time later in the year, and certainly before the main marketing season in the autumn. America already has considerable quantities of pork products on hand: indeed, there is a constant threat of bacon being declared surplus under the ECA provisions. But with the British market unable to take the whole expected surplus there is little alternative but to let farmers take their chance in the American market.

This is symptomatic of the reorganization of Canadian agriculture which may now be inevitable. With the reduction, and probable early end of the British contracts the government has lost what was an automatic floor price. Farmers have a clear warning to make their production as flexible as possible.

A House

Continued from page 14

original wall. There are no windows on either the west or the east ends of the original basic unit which simplifies matters considerably. A door is cut in the west wall and this affords ready

access to the two new bedrooms. Entry may be gained to them without having to go through any other room in the house. They are conveniently located in relation to the bathroom. Clothes closets and built-in chests of drawers or dressing tables serve to conserve space and at the same time provide necessary storage for clothes and personal items.

If and when the family has grown to the size which demands this extra sleeping space, then it seems logical that more work and living area will be required. The second addition has been planned with this in mind. A 7'-0" addition may be made to the east end of the house. This provides a new utility room on the main floor, which will be welcomed by the housewife because it is much closer to the kitchen. The home owner has a choice of enlarging the living room or having a screen porch as shown on the perspective plan drawing. Making such

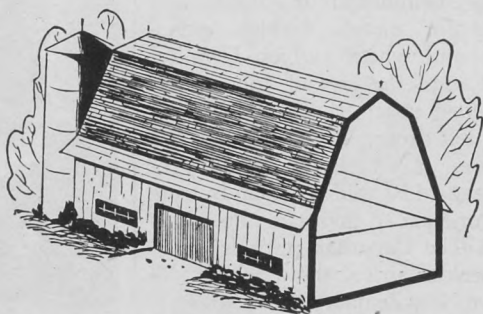
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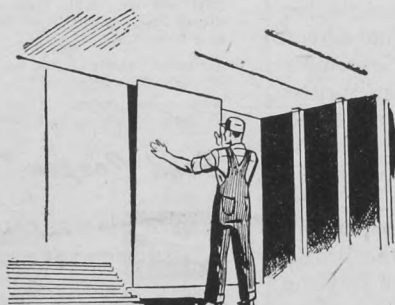
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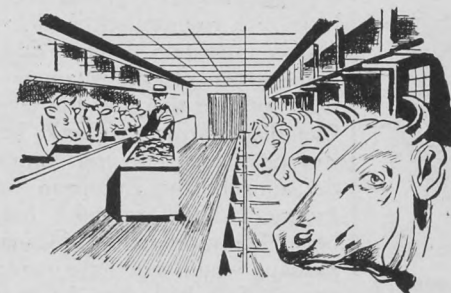
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an expansion, the living room would then be 13'-0"x19'-0". In this case two or more windows should be put in the east wall. Others may prefer to have the screen porch. In districts where dust storms are frequent in spring and summer, many may prefer to forego the screen porch.

It must be remembered when building a house from this plan, that ideal living accommodation is not obtained at the first stage of construction. It is designed to assist those who need a small house now but wish to have one which later may be enlarged. Building in stages may be the present solution to the financing problem. In the basic central unit the home owner has a very small but comfortable house. As his finances permit, he may enlarge it.

Working to this plan the home builder, from the start, has the satisfaction that he will have a house which provides for modern conveniences and comfort. At each stage, though one or more possible additions are delayed, he is assured of a dwelling with a pleasing exterior appearance.

A study of the floor plan shows that entrances to the two proposed additions have been given careful consideration. Privacy is provided for each room and there are no cross lanes of traffic in going to any part of the house.

The sketch indicates that the house is designed to fit into a farmsite that has the barns situated to the north with the highway running parallel to the south or the east side of the house.

The Trespasser

Laddie had cared for the children on this farm for many years and he did not take kindly to the cocky stray

by M. K. EDWARDS

NEVER was a dog more loved than Laddie. And there never was a dog who loved more. For Laddie belonged to, not one small boy, or one wee girl, but to a whole family of children.

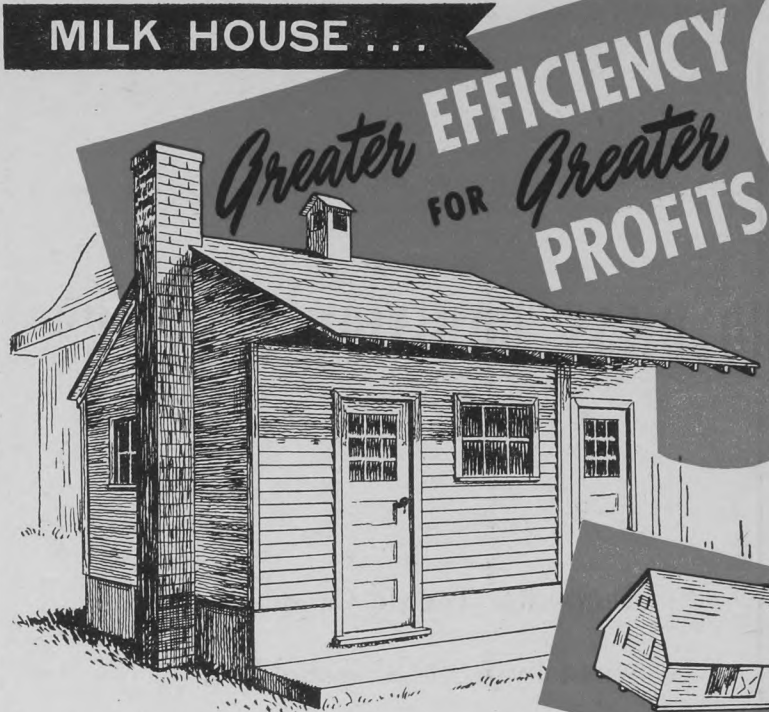
And what a family! There was Gogo of the flaxen curls and merry grin, who had a growing boy's love for adventure. He it was who led the children—and Laddie—into all sorts of interesting places, and all kinds of exciting mischief. Next came Lala, brown-eyed imp of tireless energy, and her sister Leeny, never far behind in fun. Solemn little Dickie, completed the happy group.

So you see what I mean when I say Laddie was a much-loved dog.

What fun he had, fetching sticks for the children, or wrestling with the boys, or running down and "throwing" an old car tire that had been sent spinning across the yard. It was fun, too, to go exploring. Laddie loved to ramble with the group all over the farm, scaring up a rabbit in the pasture bluffs, or obediently heeling when there were Indians to be ambushed.

Then one day Trouble came into Laddie's life—Trouble in the form of a sleek little, spoiled little, brown little dog who strayed onto the farm and took over the whole family. The children loved the little stray on sight. He was so tiny and quick and shiny-smooth! Poor Laddie, big and shaggy,

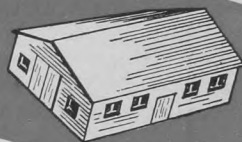
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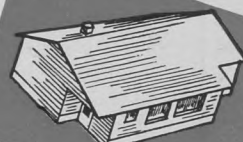
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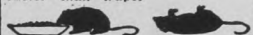


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and getting old and a little deaf,
showed up very badly indeed.

For a while Laddie moped, nursing
his hurt feelings in a corner by the
barn. He could hear the happy shouts
of the children, and the excited yaps
of the pup, and his tail drooped in
sorrow. That pup! Listen to the yap of
him! He didn't even have a respect-
able-sized bark. But what could you
expect from such a pint-size? That was
the whole trouble. He was such a
little thing! If he had any size to him!
But you can't fight a dog the size of a
kitten! Not and keep your self-respect.

The shouts of the children grew
nearer. They were down by the creek
now. Suddenly Laddie jumped up and
trotted over to them. He could stay
away no longer.

"Here, Brownie," the children were
calling. "Go fetch, good dog."

But Brownie stayed right where he
was. Go into the nasty cold creek? Not
him! Not for anybody!

LADDIE'S heart lifted. Here was
his chance. Down the steep bank
he raced, and plunged into the deep
water. In a moment he had the stick in
his teeth and was struggling up the
slippery bank. The water in his heavy
coat was a dead weight, holding him
back. His old legs were stiff but at last
he topped the hill. In a flash the little
brown dog was at his side and before
Laddie knew what he was about, he
had the stick and was racing away
with it to the waiting children.

How they laughed and petted the
stray. How delighted they were at his
cleverness! Laddie lay quiet, panting a
little, and his eyes narrowed in anger.

Once more the stick sailed out into
the creek. "Go fetch! Go fetch!" called
the children. Laddie plunged in after
it and the little brown dog waited,
tail away, on the bank.

Slowly Laddie struggled up out of
the water. But this time he was deter-
mined not to be cheated out of his
prize. Just as the thief was about to
grab the stick, the old dog dropped it
and grabbed instead, the scruff of the
brown dog's neck. And he shook him.
Shook him thoroughly, completely and
satisfactorily, and threw him into the
cold creek water. The surprised mutt
swam quickly across to the far bank,
climbed out, and, tail tucked in, lit
out for parts unknown.

Laddie watched him out of sight,
then picked up the stick and laid it
carefully at Gogo's feet. With careful
dignity he trotted over to his corner by
the barn. He showed that pup who
was boss on this farm!



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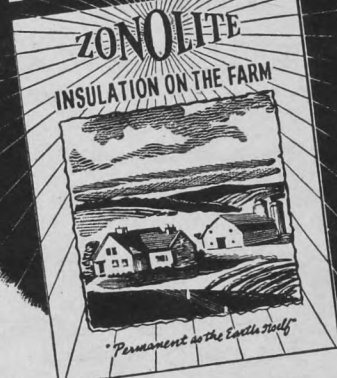
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The Countrywoman

*Quiet minds cannot be perplexed or frightened,
but go in fortune or misfortune at their own pri-
vate pace, like a clock during a thunderstorm.*

—ROBERT LOUIS STEVENSON.

*The world is only a place of pilgrimage; but,
after all, there is a good deal of cheer in the journey,
if it is made with a contented heart.*

—HENRY VAN DYKE.

In March Mood

COME March and we find that we are very tired of winter! Yet the weather's fitful moods remind us that winter is not quite gone. This too is usually the season of the "break-up" of the roads. Communication with neighbors and the nearby town may be disrupted. We somehow resent the feeling of confinement and yearn for a change of some sort.

Possibly we have completed some of the special things which we planned for winter occupation. Or it may be that we are attempting to finish off some task, study or club program, upon which we launched ourselves so hopefully last autumn. Now there is apt to be a monotony, a dullness in carrying these things through to a fitting close. Winter's interests and occupations seem to go stale on us.

Spring is not yet quite here. But we note, almost with astonishment that the days have lengthened; that they are bright and sunny. There is a certain balminess in the air. Black patches of ground appearing remind us that soon the men will be working on the land; that women will be out digging the garden, inhaling the smell of the good earth; planting new seed in the hope of summer blossom and fruit. The housewife regards the rooms of her house with a critical eye and decides in her mind what things shall come first in the order of the annual housecleaning. There is a restlessness in the air, a desire for definite activity; a longing for change and variety.

Late winter and early spring parties are an aid at such a time. They should be gay and colorful to offset that end-of-winter feeling. Weather and roads permitting, why not make St. Patrick's Day an excuse for a merry gathering, or a colorful tea. The "green" of the Irish lends itself well to decoration schemes. There are ideas galore for good luck charms, gallantry, pertness, laughter and good food.

Or in a more daring mood, you may plan and hold a Mad March party. This could be fashioned on the Alice in Wonderland pattern, complete with such characters as the Mad Hatter, the Dormouse, the Queen and Jack of Hearts. The coming of April first affords the germ of an idea for a "foolish" party. A little imagination and some work on costumes for the leading characters will yield high returns in fun. The more absurd the costumes and the actions of the chief characters, the better will be the mood of your spring party.

The Family Approach

WHILE on the point of adding variety to a program of club work, we quote here an excerpt from the January issue of the Extension Service Review, published by the U.S. Department of Agriculture, Washington, D.C. It is from an article entitled: "Leaders Grow in Ability," by Verona Lee J. Langford, home demonstration agent in Pitt County, N.C.

"Husbands' Nights' in the county have done much to develop rural leadership. These are educational meetings held in February in each of the 23 home demonstration clubs. Husbands, club members, older boys and girls attend. They are part of the plan of work. Five years ago leaders requested a school on buffet suppers prior to these meetings. Other schools have followed such as a two-day recreation school on programs for dinner meetings. Five years ago the agent found timid men and women at their first real dress-up buffet suppers. The agent assisted with everything from serving the meals to giving the programs and con-

**Now that spring is near at hand, there
is a yearning for change, variety and
new ideas**

by AMY J. ROE

ducting recreation. As a result of special training for these meetings the agents found men and women with poise, self-confidence, and smiling faces at the meetings in 1949.

"The leaders had turned these meetings into citizenship meetings. Arrangements had been made by leaders for county officials to speak on 'You and Your County Government.' Recreation was well conducted by leaders. The agent went as a guest. Men have developed a real interest in the entire home demonstration club program by attending these meetings. The family approach is necessary if any home demonstration club program is to go forward.

"The greatest accomplishment of any extension program is the development and use of trained leaders. This can be done by making a plan and following it."



Miracle

*Who is in love with loveliness,
Need not shake with cold:
For he may tear a star in two,
And frock himself in gold.*

*Who holds her first within his heart,
In certain favor goes;
If his roof tumbles, he may find
Harbor in a rose.*

—LIZETTE WOODWORTH REESE.

My Land

*Its frozen veins are thawing in the sun;
Richly I smell the vigorous, vital breath
Of spring, defeating nature's yearly death;
Bright streams of melted snow begin to run.
With hope bruised yet never conquered I entrust
My gold—hard crinkled seed—to eager ground,
Praying wind and frost for kindness—Give me sound
Good grain this year, no derelict of dust!
The warm sun blesses me, the rousing earth;
Here am I sown and rooted, strong new wheat,
May I sprout hardily, grow courage, mirth,
Ripen to worthy harvest, wise and sweet.
My heritage! Fearless of storm I stand
Face to the sun, a part of this, my land.*

—ANNE MARRIOTT.



Presenting The Utility Room

A VERY useful and timely bulletin entitled Utility Room For The Farm Home has just been published by the Rural Housing Advisory Committee for British Columbia. It is compiled by Eileen C. Cross, supervisor of Home Economics Extension Department, University of B.C., and Morris Whiteman, past secretary of the Advisory Committee. This is a third in the series of helpful bulletins which the Committee has issued since its formation in 1947. Two more publications are in the course of preparation.

Funds for this work are supplied by the provincial government through the Department of Trade and Commerce and from the Dominion government through Central Mortgage and Housing Corporation. The aim of this Committee, as with several other similar regional committees across Canada, is to distribute material and information that will help the farmer in his desire for better housing accommodation.

To the question—what is a utility room?—a concise answer is given in the introductory paragraphs: "The utility room is the housewife's workshop, taking certain tasks out of the kitchen and into an area arranged for working on these tasks more conveniently. Here she can prepare food for storage, do the family wash, iron and mend, and may do the family sewing. This room could provide storage for outdoor clothing, and summer storage for winter clothes. The small farm utility room could have space for the separating machine and dairy utensils and, if space permits, a shower and wash-up area for the men and children. Farm produce may be prepared for market in the utility room.

"This all-important room in the home should be planned carefully to save steps and unnecessary labor, whether it be in a new home or an old. In the older homes, often an oversized kitchen can be planned to give efficient service as a kitchen and a utility room, or the back porch might be remodelled to meet the needs of the homemaker."

The essential features of a utility room are given in the considered order of importance as:

- Convenient access to the kitchen.
- Convenient access to outdoors.
- Efficient and well-arranged equipment.
- Good working space at convenient heights.
- Good lighting and ventilation.
- Easily cleaned surfaces.
- Efficient storage space.
- Adequate wiring.
- Cheerful, pleasant decorative scheme.

In line with the modern accepted idea that a room is planned from the standpoint of use, equipment and materials to be stored in it, there is a clear and simple analysis of the jobs, the equipment required and the supplies to be stored. The booklet is well illustrated with drawings and actual photographs. The section on laundry is particularly good. A study of the ideas therein should enable the handy man to build and instal useful pieces such as clothes driers, adjustable ironing boards of various widths and laundry cart.

A handy summary of recommended measurements to allow space for washing machine, tubs, cabinets, tables and ironing board is given. The housewife who may not have all these items at the time of building or remodelling will thus be assured that she can make her plans now and add equipment in the future as her means permit.

It is admitted in the foreward that there has been a gratifying response to the Committee's work in British Columbia, showing that it is answering a great need. The British Columbia Committee is to be congratulated on publishing the new bulletin, the first of its kind in Canada, on an important feature of the modern farm house—the utility room.

Leadership Training

SUITABLE training for leaders has been the aim of some of the thoughtful workers and leaders of the Women's Institutes of Manitoba for some time past. The idea has been discussed at local and district gatherings. It was realized last fall, when a four-day Leadership Training Course was held in the Agricultural and Homemaking School at Brandon. Over 130 applications for the course were received. Owing to the limitation of school dormitory space, it was possible to accommodate 80 only.

The course was designed to give training in social as well as educational ways. The discussions were introduced and led by members of the Board of Directors. They were on such topics as: members' and officers' responsibilities; minutes and reports, annual meeting, program planning, projects and public speaking.

There were special talks on how to get the most out of film showing and Film Councils and Services available by representatives of the National Film Board. The social side of meetings and community gatherings was presented. A Get Acquainted Party on the opening night and periods of singsongs added lighter features.

Success in the home curing of meats depends upon an understanding of a few simple principles, a proper mixture of ingredients and following the proper method of applying them

WITH spring not too far off interest turns again to the preservation of meat for use during the warm summer months ahead. Particularly concerned is the farmer, for it is on the farm that home grown and home prepared meats are used.

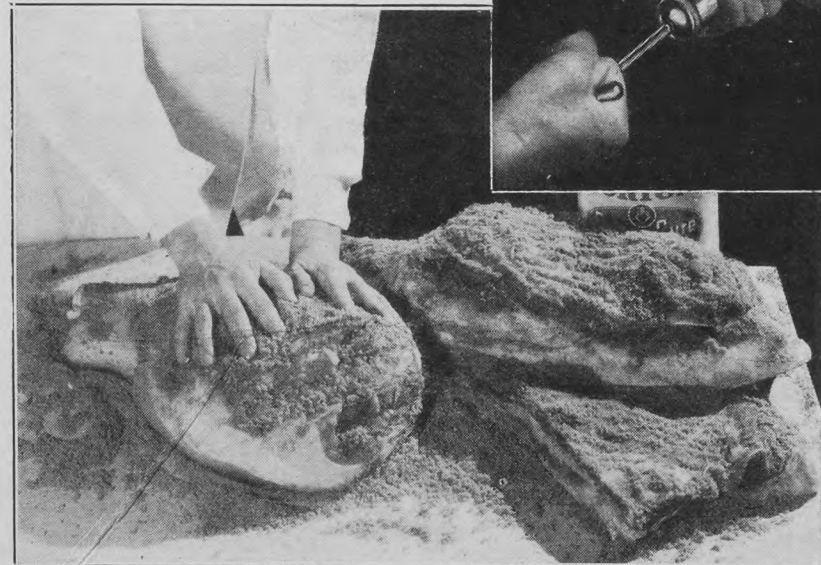
With improved methods of freezing, canning and curing, meat produced on the farm can be prepared at the proper season and put away for future use. In some areas cold storage lockers answer the need for summer storage, but the majority of farm people cure their own meat. There is no mystery about meat curing; neither should there be any guesswork. Success depends upon an understanding of the few simple principles involved and the following of an accepted method of applying them.

Meat curing has two aims—to preserve the meat and to give it added flavor. There are several types of mixes that can be made at home or purchased commercially to be used in the curing process. In each the salt is the curing agent functioning as the preservative. The saltpetre is used to bring out and retain the color. The sugar counteracts the astringent quality of the salt, giving a juicier, better flavored meat. The sugar and the other ingredients that may be present in the mix give a more balanced flavor, and in some cases substitute for smoking the meat. Commercial mixes give a new or different flavor without the extra work involved in weighing, mixing and smoking. But the home-made mixture of brown sugar, saltpetre and salt is as good a preservative and is still preferred by a large number of people. It gives an acceptable product indeed; although there is the added work of smoking after the curing process.

The cuts of pork best suited to curing are the hams, picnic shoulders and bacon sides. Frequently the jowls, butts, and loins or "Canada bacon" as these are called, are done too. Beef cuts such as the brisket, plate and neck are immensely improved by curing and smoking. Beef, preserved by curing, is usually referred to as corned beef. Leg and shoulder of lamb, cured and then smoked, are tasty and will have greatly improved keeping qualities.

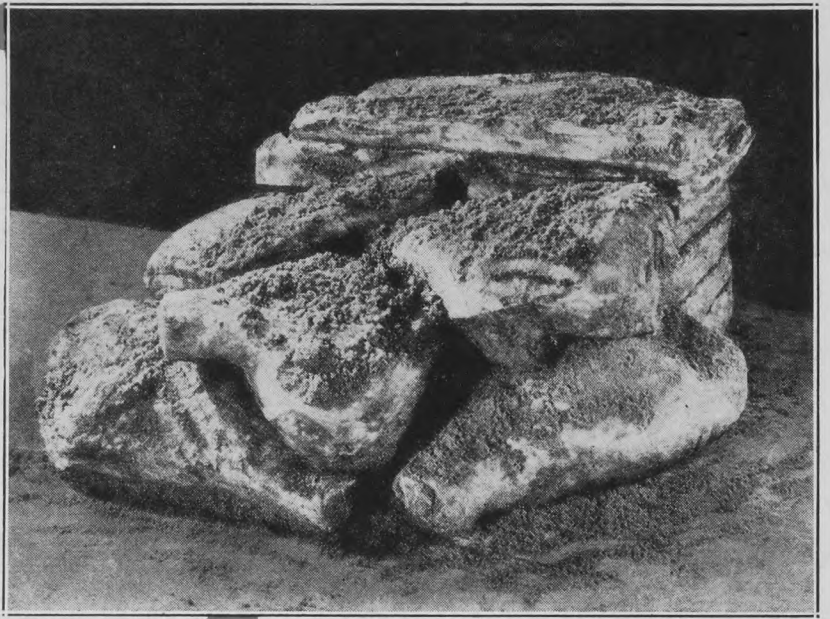
Because of the difficulty in controlling temperatures on the farm it is difficult to cure meat during the warm weather. Curing operations should be planned so that the product is out of the brine by

The pump method gets the cure into the bone area, preventing spoilage. Each piece must be thoroughly rubbed with the mixture at the start and once more during the cure.



Home Cured Meats

by LILLIAN VIGRASS

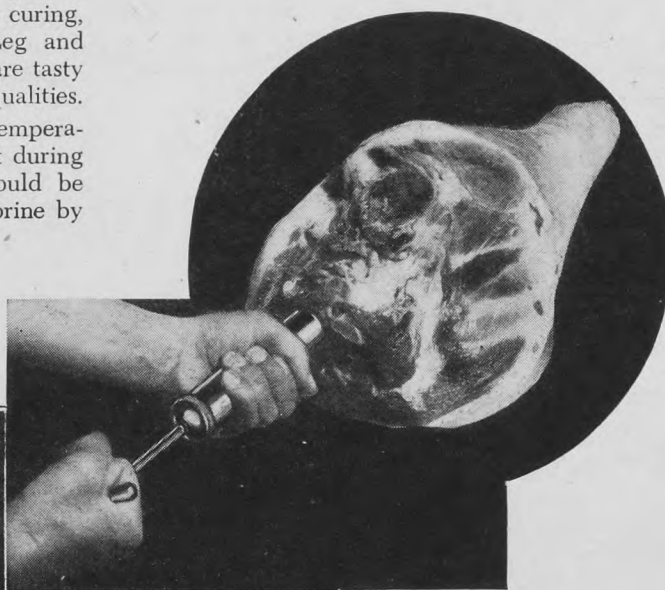


Cuts rubbed and stacked ready for dry cure.

late March or early April. This will cut down on spoilage to a great extent.

In recent years the "pumping" of hams and shoulders has become a recommended practice in the prevention of souring. The process involves forcing pickle brine into the thicker pieces of the meat by means of a meat pump, an instrument similar to a huge hypodermic needle attached to a syringe. In this way the cure is introduced into the centre of the ham before spoilage has a chance to take place. An over-cured outside and an under-cured bone area are done away with and a more uniform flavor is achieved throughout. The curing period is shortened by as much as one-third by this process.

THERE are two major methods of curing the meat: the "dry cure" and the "sweet pickle" or "brine cure." The same solid ingredients are used for each, with water added to the latter. Both methods are good and it is a matter of personal preference which method is used. For good results, a cool place in which to hold the curing meat should be selected.



In the dry cure the pieces are rubbed lightly with the mixture and left to drain for several hours. This draws out the first flush of blood and water from the meat. The meat is then pumped if desired, and thoroughly rubbed with half the cure. It can be placed on a shelf to cure or packed in a box

or barrel. Some authorities advise boring a few holes in the bottom of the container to let the bloody water out as it drains from the meat. After four or five days the meat is re-rubbed and packed into the container. Every seven to ten days after the second rub the meat must be overhauled and repacked. In the sweet pickle or brine cure the pieces are pumped if desired, rubbed and packed into a barrel or crock. The remaining cure is mixed with cold water, which has been purified by boiling it then allowing it to cool, and poured over the pack. The meat is weighted down so the pieces are all under the brine. Repacking is necessary every seven days throughout the cure to allow the pickle to come in uniform contact with any spots of the meat that may have been pressed too tightly together.

While smoking is not essential, it is beneficial in increasing the keeping qualities of the meat. It also adds to the flavor and palatability. Before the smoking is begun the meat must be well washed then soaked for approximately an hour to remove the excess salt and to eliminate salt streaks. Following the washing each piece should be hung to dry in a cool place for at least 24 hours. The meat is then strung in the smokehouse so that no two pieces touch and are about seven feet above the fire. The hardwoods are generally used in eastern Canada and corncobs in the central States. In western Canada some of the more common woods may be used successfully for smoking of meat. Scrub oak or oak sawdust are good and poplar will give satisfaction. Avoid pine and fir as they give the meat a disagreeable flavor. Do not let the smokehouse become hotter than 100°F. At this temperature 24 hours of continuous smoking should give the meat a rich, brown color.

IN storing the meat remember that it must be kept dry and cool in a well-ventilated, screened and darkened room. The furnace room in the cellar has been suggested as a good storage space if it is sufficiently cool. Wrap the meat first in cheesecloth and then tightly in brown paper. Hang it so no two pieces touch. If mold forms on the surface wash it off with water and vinegar—the quality of the meat is not impaired by surface mold. It is perhaps wise to use the bacon during the spring and early summer; the hams and shoulders can be held for a longer period of time.

The Dry Cure

For each 100 pounds of pork the following quantities of ingredients are required:

| | | | |
|-----------|--------|-------------|--------|
| Salt | 8 lbs. | Brown Sugar | 3 lbs. |
| Saltpetre | 2 oz. | | |

Mix the ingredients thoroughly. If you have a meat pump dissolve 1 lb. of the mixture in four pounds of boiled water and inject it around the bones and into the centre of the hams and shoulders, using one pound of this pickle to 15 or 16 pounds of meat. Rub the pieces with the dry mixture and pack into a suitable container. Use half the given amount in the rubbing, and to sprinkle between the layers of meat. Rub the meat with the remaining half seven days later and pack again



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57



**HEINZ
SPAGHETTI
WITH MEAT**

into the container. Repack at seven-day intervals. The meat should be packed with the skin to the outside of the mass, the larger pieces at the bottom and not stacked more than three feet deep. Cure for 10 to 14 days for bacon, 35 to 40 days for a 15-pound ham. Oversalting is not probable with this method. End the process on time, however, if the temperature is over 45°F, or rancidity may develop.

Brine Cure

The following proportions are recommended for 100 pounds of pork:

| | |
|-------------|---------|
| Salt | 10 lbs. |
| Brown Sugar | 3 lbs. |
| Saltpetre | 2 oz. |
| Water | 5 gals. |

Mix the dry ingredients. If desired, for pumping add 1 lb. of this mixture to 5 lbs. of the boiled water and pump it around the bones and into the centres of the hams and the shoulders. Rub the entire amount of the mixture into the pieces as they are packed into the crock or barrel. Pack the hams first with the skins down, then the shoulders and lastly the bacons with the skin side up. Dissolve any remaining mix in the water that has been boiled and then cooled, and pour over the pack. Weight down the meat with a clean board and a non-metal weight such as a stone. Repack at seven-day intervals or less for a uniform cure. If the brine becomes stringy or soupy, it means that bacteria has had a chance to come in contact with the meat and if allowed to remain will sour or spoil it. In this case either change the brine entirely or boil it, cool and again pour it over the meat, adding cold, boiled water to cover the meat.

Corned Beef

Make a brine of 8 lbs. of salt, 3 lbs. of sugar, 4 oz. of baking soda, 2 oz. saltpetre and 4 gals. of water. For a very good color use 4 oz. of cream of tartar, in place of the saltpetre. The beef to be treated should be cut into pieces weighing five to ten pounds. Pack in a stone crock or barrel, cover with the chilled pickle and weight it down with a non-metal weight. Leave it in the brine 10 to 25 days. A light smoke will improve the flavor of corned beef.

Cured Lamb

If a leg or shoulder of lamb is to be cured, a brine similar to the one described for Corned Beef will be satisfactory. Leave the meat in the pickle about three weeks, overhauling at least once during the curing period.

When cured, wash the meat in tepid water and let it dry thoroughly. Smoke it lightly and store in a cool, dry, well-ventilated place.

Smoked Fish

This method of curing fish can be used successfully for whitefish and other fresh water fish you may wish to preserve. Dress the fish; if it is over ten pounds cut it into thick steaks. Smaller fish can be slit to the backbone to allow penetration of the brine.

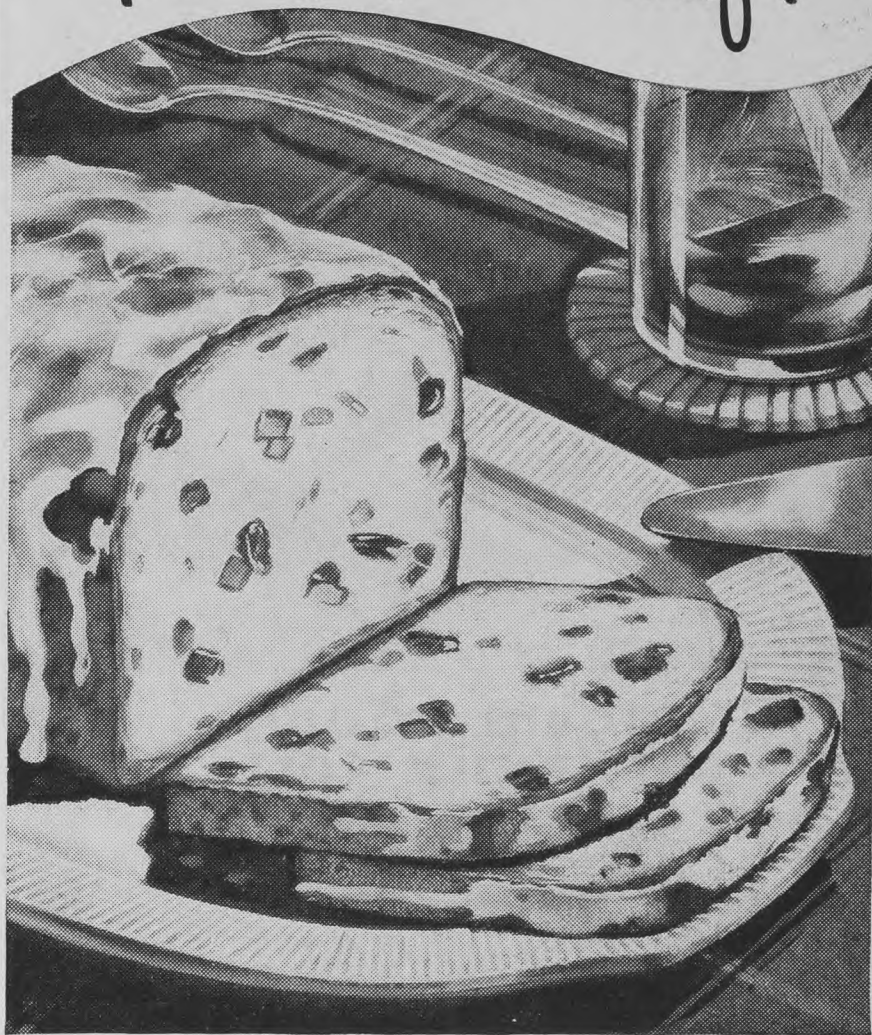
Make a brine of:

| | |
|-------|---------|
| Salt | 2 lbs. |
| Water | 4 gals. |

Leave fish in brine for 15 to 16 hours; then remove, wash in tepid water and allow to dry thoroughly.

Arrange fish on rods or a wire rack in the smokehouse; smoke 6 to 7 hours.

Frosty fruit loaf!



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strength. Keeps vital and active, till you're ready to bake!

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FROSTY FRUIT LOAF

Makes 3 Loaves

Measure into large bowl

2/3 cup lukewarm water

2 teaspoons granulated sugar

and stir until sugar is dissolved.

Sprinkle with contents of

2 envelopes Fleischmann's

Royal Fast Rising Dry Yeast

Let stand 10 minutes, THEN stir well.

In the meantime, scald

2/3 cup milk

Remove from heat and stir in

1/2 cup granulated sugar

1-1/4 teaspoons salt

6 tablespoons shortening

Cool to lukewarm and add to yeast mixture. Stir in

3 well-beaten eggs

Stir in

3 cups once-sifted bread flour

and beat until smooth; stir in

3 cups mixture of washed and

dried seedless raisins, quar-

tered candied cherries and

slivered mixed candied peels

Work in

3 cups more once-sifted

bread flour

Turn out on lightly-floured board and knead dough lightly until smooth and elastic. Place in greased bowl, brush top with melted butter or shortening. Cover and set

dough in warm place, free from draught. Let rise until doubled in bulk. Punch down dough and divide into 3 equal portions; form into smooth balls. Shape into loaves; place in well-greased bread pans (4 1/2" x 8 1/2", top inside measure and 2 3/4" deep). Grease tops. Cover and let rise until doubled in bulk. Bake in moderate oven, 350°, 45-50 minutes. Cool and ice with Plain Icing.

PLAIN ICING

Combine 1/2 cup sifted icing sugar

2 teaspoons milk

1/8 teaspoon vanilla

and beat until smooth.





ROBIN HOOD BUTTERMILK ROLLS

"Tempting, tasty buttermilk rolls—easy to make! And right in line with your budget." — says Rita Martin

"Here's all you need":

- | | |
|------------------------------------|---|
| 1 package fast rising dry yeast OR | 2 teaspoons salt |
| 1 cake compressed yeast | ¼ cup melted shortening |
| ½ cup lukewarm water | ½ teaspoon soda |
| 1½ cups buttermilk | 4½ cups (about) sifted Robin Hood Flour (it's used by 4 out of 5 baking-contest winners!) |
| ¼ cup sugar | |

"The kiddies . . . and their daddy . . . will go for these in a BIG way! They're economical, nourishing, and have plenty of appetite appeal.

"Guarantee your success with these rolls (and all your baking), by using the guaranteed* all-purpose flour — Robin Hood of course!

"Here's all you do":

Dissolve yeast in lukewarm water. If dry yeast is used, add 1 teaspoon sugar and let stand 10 minutes.

Scald buttermilk and add sugar, salt, shortening and soda.

Cool to lukewarm, add dissolved yeast and stir well.

Add sifted Robin Hood Flour, (it's guaranteed to give satisfaction), to make a soft dough.

Knead until smooth, then shape into rolls.

Place in greased pans or on greased baking sheets.

Brush tops with melted shortening.

Cover and let rise in a warm place until doubled in bulk.

Bake in a hot oven, 425°F, for 15 to 20 minutes.

Yield: 2 dozen rolls.

*Certificate with every bag guarantees your money back plus 10% if you're not entirely satisfied.

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Rita Martin

Director, Home Service Department,
Robin Hood Flour Mills Limited,
300 St. Sacramento St., Montreal



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Serve Eggs in Spaghetti for a new and tasty supper dish.

Eggs Are Versatile

Economical, appetizing and nutritious, eggs play their part in a variety of interesting dishes

EGG prices have been cut almost in half. To the producer this is bad news; but to the home-maker it means that eggs are now one of the most inexpensive as well as one of the better sources of high quality protein. These lower prices mean that many families will not only be living up to but exceeding the three eggs per person a week required by Canada's Food Rules.

Do not let your family tire of eggs by serving them in the same old way too often. There are numerous variations and as many disguises. Eggs combine well with milk, cheese and tomatoes for lunch or supper dishes; they add flavor and color to desserts; and they give lightness to a cake. While eggs are less expensive is the time to splurge on an angel food cake or to try making a sweet souffle for dessert; this is the time to try any one of these new egg dishes that are so tempting but are rather hard on the egg supply.

There is one rule to follow in cooking eggs or any dish in which egg is the principal ingredient and that is—avoid the use of high temperatures. Too great a heat toughens the egg white and makes it rubbery. Overheating is also responsible for custards that curdle, scrambled eggs that are watery, and souffles and sponge cakes that do not rise as they should.

Cheese Strauta

- | | |
|-----------------------|------------------|
| 6 slices of bread | 1¼ c. milk |
| 3 eggs | Salt, pepper and |
| ¼ lb. Canadian cheese | mustard to taste |

Trim bread slices and fit three of them into bottom of casserole. Slice cheese over it and cover with three more slices. Pour over it a mixture of eggs, milk, salt, pepper and mustard. Let stand one hour, in a cold place. Bake in a 350°F oven for half an hour. Serve at once while still puffy.

Eggs In Hiding

- | | |
|--------------------------|--------------------|
| 1 T. butter | 1 can tomato soup |
| ½ c. diced cheese (hard) | 6 hard cooked eggs |

Slice the eggs and arrange in a buttered baking dish. Make a sauce of the remaining ingredients and pour over the slices. Top with buttered crumbs. Bake until heated through and crumbs are brown.

Eggs In Spaghetti

- | | |
|--|---------------------------|
| 2 c. broken spaghetti or noodles | 5 c. boiling salted water |
| 2 T. fat | 2 T. flour |
| 1½ to 2 c. milk | ½ tsp. salt |
| ¼ c. chopped green pepper (if desired) | 2 T. grated cheese |
| 5 eggs | ½ c. crushed corn flakes |

Cook spaghetti in the boiling salted water. Drain. Make white sauce of fat, flour and milk and salt. Add green pepper and grated cheese and stir over hot water until the cheese is melted. Add to spaghetti and mix well. Pour into a greased baking dish, make five depressions in the mixture. Sprinkle with crushed corn flakes; break an egg into each depression. Sprinkle with salt and pepper. Bake at 375°F for 10 or 15 minutes or until eggs are set.

Goldenrod

- | | |
|--------------------|-------------|
| 6 hard cooked eggs | 4 T. flour |
| 2 c. milk | 1 tsp. salt |
| 2 T. fat | Pepper |

Separate the eggs; chop the whites. Make a white sauce of remaining ingredients; add the chopped whites. Make two pieces of toast for each serving. Cut them square and butter. Lay a piece on each plate and pour the creamed egg over each. Rice the yolks over the sauce. Cut remaining pieces of toast into four, diagonally, and arrange them around each serving to form a star.

Eggs In Nests

- | | |
|----------------------|----------------------|
| 3 c. mashed potatoes | 1 T. butter |
| 1 T. chopped onion | 2 T. chopped pimento |
| 6 eggs | Chopped parsley |

Mix potatoes, parsley, onion and pimento. Add butter and beat until creamy. Spread in a buttered baking dish. Make six hollows and drop an egg in each. Sprinkle with salt and grated cheese; dot with butter; bake 20 minutes in moderate oven, 375°F.

Hot Devilled Eggs

- | | |
|-------------|---------------------------|
| 2 c. milk | ¼ c. chopped ham |
| 2 T. butter | 1 T. Worcestershire Sauce |
| 2 T. flour | Pepper |
| 1 tsp. salt | |
| 4-6 eggs | |

Hard cook the eggs. Cut in half lengthwise, remove yolks and mash with a fork. Mix with ham, sauce, one-half salt and pepper. Add a little cream to make it a soft consistency. Pack into egg whites. Place two halves together and arrange in

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a buttered shallow baking dish. Mix the butter, flour, $\frac{1}{2}$ tsp. salt and pepper to make a white sauce. Pour over eggs. Sprinkle with buttered crumbs. Bake in a moderate oven until heated through and crumbs are brown. Serve on squares of buttered toast.

Chocolate Souffle

| | |
|-------------------------|--------------|
| 2 c. milk | 2 sq. grated |
| $\frac{1}{3}$ c. flour | chocolate |
| $\frac{1}{2}$ c. sugar | 1 T. butter |
| 1 tsp. vanilla | 6 eggs |
| $\frac{1}{2}$ tsp. salt | |

Scald milk with grated chocolate in double boiler. Mix the flour, salt and $\frac{1}{4}$ c. sugar in a bowl. Add the chocolate mixture gradually blending until smooth. Return to the double boiler. Cook until thick, stirring constantly. Add butter and vanilla. Cool but *do not* chill. Separate the eggs and beat yolks until thick and lemon colored. Fold yolks into the mixture.

An hour before you intend to serve the dessert beat the egg whites until stiff but not dry. Add the remaining $\frac{1}{4}$ c. sugar, folding in with a spatula. Fold into the chocolate mixture lightly and quickly with a down-up-and-over motion. Leave a few streaks of white showing. Pour into an ungreased casserole set in a pan of water and put in the oven at once. Serve immediately. Bake in a moderately slow oven (325°F) 50 minutes.

Angel Cake

| | |
|-------------------------|-----------------------------|
| 1 c. egg whites | $\frac{1}{4}$ c. fine sugar |
| (8-10) | 1 tsp. cream of |
| 1 c. cake flour | tartar |
| $\frac{1}{4}$ tsp. salt | 1 tsp. flavoring |

Beat the egg whites until frothy then add the cream of tartar, salt and flavoring. Continue beating until stiff but not dry and the peaks formed when the white follows the lifted beater stand up fairly stiff and the tip end is slightly round. Sift the sugar and sprinkle it gently over the top of the eggs one-quarter at a time. Fold it in with a total of 20 strokes of the spatula. Sift about one-fifth of the flour over the mixture and fold it in with five strokes. Repeat once then use 10 strokes for last three or a total of 40 strokes of the spatula. Pour into a tube pan. Bake at $325\text{--}350^{\circ}\text{F}$ for 45-50 minutes. Hang inverted in the pan until cool.

Boston Cream Pie

| | |
|-------------------------------|------------------------------|
| 6 egg yolks | $\frac{1}{4}$ tsp. salt |
| 1 c. sugar | $\frac{1}{2}$ tsp. flavoring |
| $1\frac{1}{2}$ c. sifted cake | 2 tsp. baking |
| flour | powder |
| $\frac{1}{2}$ c. hot water | |

Beat yolks until thick and lemon colored. Add sugar gradually. Mix and sift dry ingredients and add alternately with the hot water continuing to beat with beater. Add flavoring and bake in a greased tin at 320°F for one hour. Cool 15 minutes in the tin. Split into three layers and fill with cream filling. Ice the top or dust with powdered sugar.

Lemon Cheese-Cakes

In Yorkshire cheese-cakes is a variety of small tarts. The shells are made of puff pastry or of a rich, short paste. For the latter allow half as much shortening as flour and use cold water sparingly to mix, handling as little as possible.

This Lemon Cheese filling is delicious, too, in jelly rolls, sandwiches and layer cakes. If made when eggs are cheap it can be sealed in small containers and stored in a cool place for future use.

For a large quantity for sealing, use:

| | |
|-------------|-----------|
| 10 c. sugar | 30 eggs |
| 3 c. butter | 12 lemons |

For immediate use:

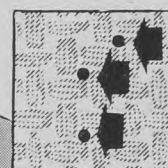
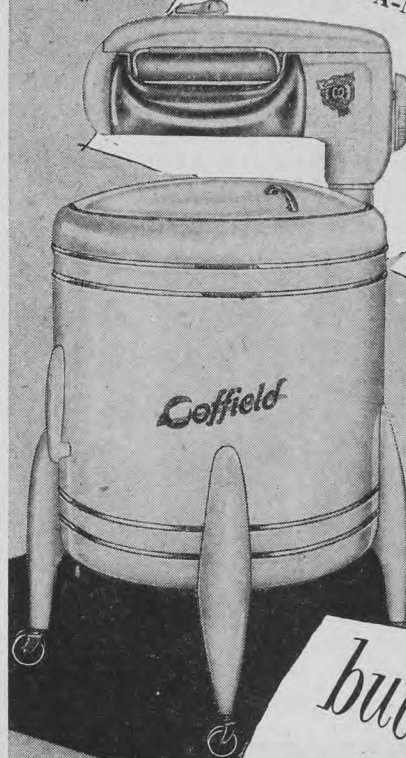
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| 2 c. sugar | 6 eggs |
| $\frac{1}{2}$ c. butter | 3 lemons |

Melt the butter in a double boiler, add the sugar, well beaten eggs and rind and juice of the lemons. Cook over water until the consistency of thick cream.

To prevent boiling over in the shells, only a small teaspoon of the filling should be used in each tart. Bake in a fairly quick oven.

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Greetings -- Garden Variety

As you plant seeds this spring, go on summer jaunts or look toward autumn occupation you may find merit in this suggestion

by FRED A FLEMING

EVERY homemaker is proud of his or her garden of flowers and is eager to share its beauty with everyone of his friends and acquaintances. The gardener makes a year-round hobby of it, from studying the seed catalogues those stormy January days, through the snowbound days of February, when the orders for seeds and roots are made out, cut down, revised and finally sent.

My mother had a habit of making use of her garden hobby. Seeds of special plants were picked and wrapped and labelled to plant next year. These seeds were not always from our own plants—not by any means. We came back from holidays with seeds in tiny twists of paper or knotted in the corner of a handkerchief, and also in an end of a scarf. It was an amateur indeed who had to label them as they were picked!

We came home from Banff and B.C. bringing seeds of pine, hemlock, fir and cedar. We had seeds of pink Iceland poppies from Lake Louise. We brought a few tiny seeds of the most beautiful long-spurred columbines and monster delphiniums and "heavenly blue" morning glories from the park gardens at the Coast. We even brought cactus seeds (and a few thorny individuals) from the desert. Pods of the delicate evening primrose came home with us from the cutbanks of the South Saskatchewan River, to add their delicate wild touch to our by-no-means domesticated garden. No true flower lover can pass a dangling seed pod without taking at least a pinch.

Sharing plants, roots, cuttings, and seeds had long been a habit with my family before my husband and I started our first garden. Our variety and quality and quantity of flowers were a source of delight to everyone. That fall while making Christmas plans, we decided to make our own greeting cards, attaching to them tiny packets of choice seeds we had gathered during the summer in our garden. Several evenings with a box of plain correspondence cards, water colors, violet ink, glue, scissors and colored cellophane, produced the most satisfactory cards we have ever sent.

While the cards were receiving a watercolor wash in pastel tints, I was busy making tiny envelopes of cellophane to hold the seeds, and filling them. We fastened them to the card with a speck of glue and a gleaming star. Last of all we composed (and this was the hard part) and printed our verse, and then we each signed our name.

WE intended to keep our list small and send these special cards to only a few gardening relatives and friends, who lived far away. When we started going through our bags and boxes and tins of seeds we had to abandon that plan. There were so many special seeds that were just what we wanted to send to an aunt in Kansas, a brother in the Peace River, a nearly-blind friend who was spending the twilight years of her life on the West Coast, and countless other friends. We sorted and listed and

packaged. We cut and pasted and printed. The stack of addressed cards grew to a glorious height. Evening after evening we worked, and how we loved it. We planned for next year and joyously recalled last year's triumphs and failures as we spooned the seeds into their tiny packages.

Here is a sample of some of the verses we printed on the cards. They were "jingly" perhaps, but they were our own, and we were well satisfied with the results of our many evenings' work.

*In spring if you will plant these seeds
In spots quite suited to their needs,
They'll scatter all their perfume there.
They are "nemesia" fair.*

*Just plant these seeds in early spring
When the days grow warm and bright,
And the gold of the sun will return to
you*

In "bartonia"—see if I'm right.

*Here's a wish to you
That is always true
As the blooms of this
"Phacelia" blue.*

*This tiny gift awaits the hour
When planting gives it growing power,
And every curled-up seed unfolds
In petalled sunshine—"marigolds."*

*"Painted daisies" do I send
To you, with this greeting,
For a joyous Christmas
And hopes of future meeting.*

*"Pansies" are for loving thoughts
I'm sending you today.
They carry thoughts of deepest love
To you—so far away.*

For a few special friends who loved a grab bag and a surprise, we combined several weird-shaped seeds, several minutely tiny seeds, and one giant sunflower seed in a surprise packet and wrote on it:

*Here are flowers of every hue,
Their colors are so gay.
They're just as good as Christmas bells
To tell you what I say.*

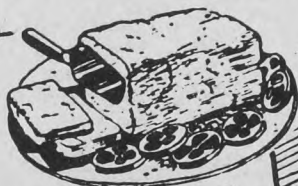
WE had letters and notes and messages from all who received our original cards. They said: "What joy to receive a Christmas card from someone far away, from someone so busy they seldom have time to write, or from someone you visited briefly during your summer motoring vacation. You tear open the envelope with a warm glow at being remembered. Instead of the conventional card you expected, you find a hand-made card from that busy hostess—that dear friend—that distant cousin—and it shares with you the glory and perfume of her Canadian flower garden."

Acknowledgements came at once, some wanting to know where and how to plant their seeds. Others waited until they had studied the new seed catalogues and could then speak with bland authority on nemesia, phacelia and bartonia. Others wrote words of loving appreciation after the seeds had bloomed in their gardens. We were surprised at the warmth of their appreciation. We were enriched by our own experience.

THIS CANNED SALMON LOAF

costs so little-is so good!

- 1 lb. Canned Salmon
- 1½ cups milk
- ¾ cup bread crumbs
- 3 eggs
- 2 tbsp. lemon juice
- salt and pepper



Scald milk, add crumbs and cook 5 minutes, stirring constantly. Add beaten egg yolks and cook over hot water (double boiler) for 5 minutes, still stirring. Cool slightly, stir in flaked Canned Salmon, seasonings, lemon juice and finally fold in beaten egg whites. Turn into well greased dish, set this in hot water and bake for ¾ hr., in 350-375 degrees F. Serves four.

49P21

CANNED SALMON

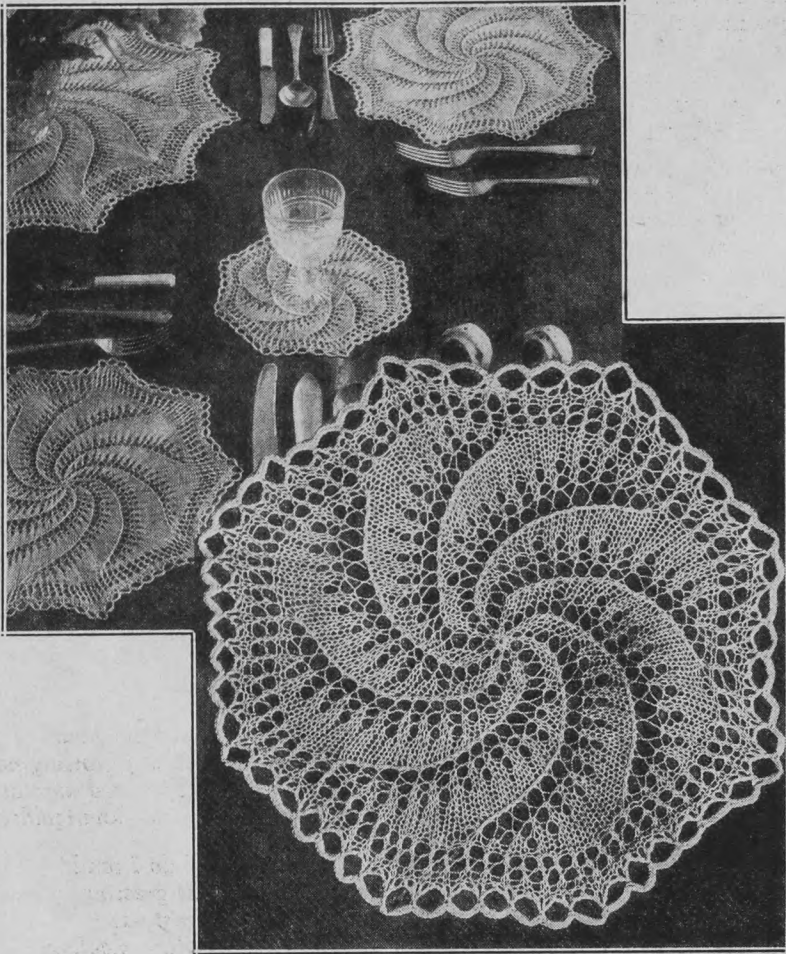
Associated Salmon Cannery of British Columbia

Dainty Ideas

Needlework suggestions for spring making

by FLORENCE WEBB

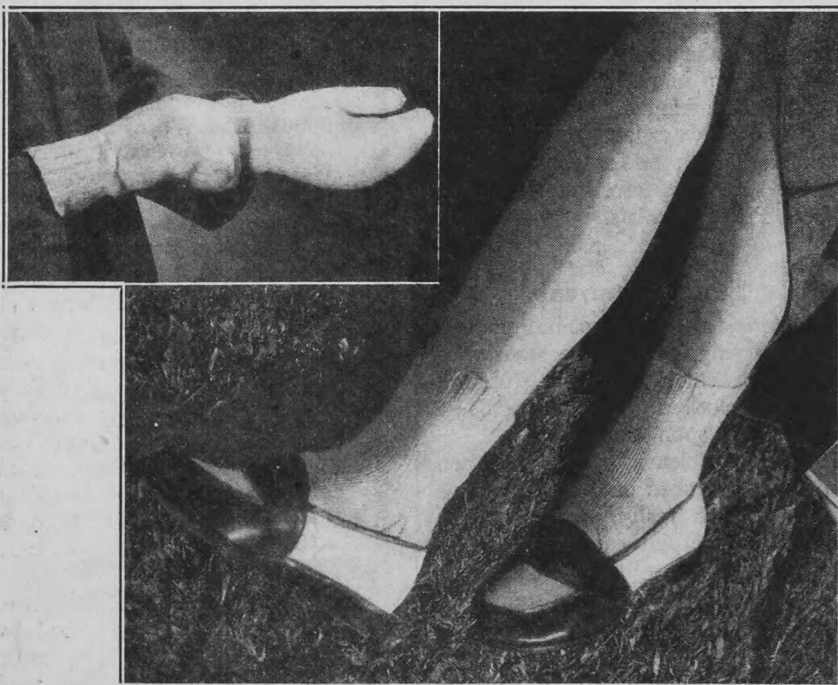
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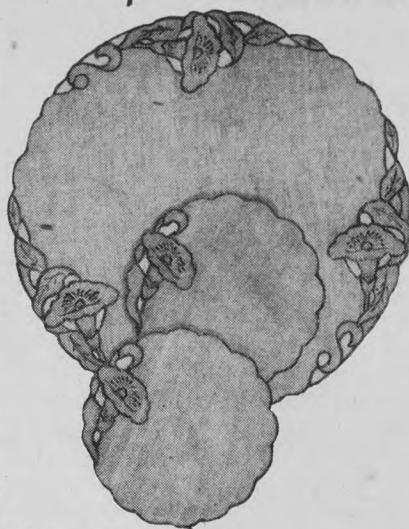
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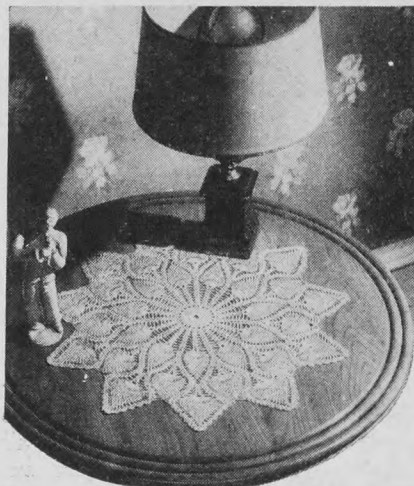
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This is a charming lily cutwork design stamped on best quality Irish embroidery linen. One set includes the 18-inch (diameter) centrepiece and two nine-inch doilies. We like the embroidery worked in either Delft blue, Indian Tree pink or white. On white linen the set is \$1.25, on cream linen it is \$1.10. Design is No. 778A. Threads (state color) are 40 cents extra.

"Pineapple" Doily



Design No. C-340.

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Soft drinks leave a tan or brown stain when washed or ironed. Remove the stain when fresh by sponging with a solution of equal parts of glycerine and alcohol. Place absorbent cloth or a clean blotter beneath the stain with the right side of the stain down. Moisten the sponge lightly with the solution and use light strokes, working from the outside toward the centre, tapering in every direction to help prevent a ring. Change the absorbent pad and cleaning cloth frequently.

To remove perspiration stains from a non-washable fabric sponge the stain with clear water. Heat will set the stain so be careful to have it removed before pressing or ironing.

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Snags To Avoid

Washday troubles that can be side-stepped

by MARGARET M. SPEECHLY

OF all the equipment you use on washday, the wringer probably saves the most toil. If you need convincing of this, try wringing the water from a load of clothes with just your two hands and see what a lot of effort it takes. Further, the water will not be completely removed and in twisting the material you may even snap some of the threads.

Considering what your wringer can do, handle it with the greatest respect. Start by adjusting the screw carefully so that the water will be pressed out evenly. Loosen the tension when putting through silks and rayons as they hold creases stubbornly if the rollers are too tight. Adjust the screw for very large articles, or for small things.

Before putting the washer away, release the tension on the rollers and wash them well. Never leave them screwed down until next time as they may stick and become roughened, or become indented where the rolls touch. Remove oil or grease immediately as it softens rubber. Do not leave the machine sitting in the sun. These are small items, but important.

Make a point of feeding the wringer efficiently. Put through the clothes one at a time smoothly, not in bunches. This presses out as much water as possible, whereas careless feeding leaves some parts wetter than others, and carries over soapy water from the washer to the first rinse. It does more than that. By squeezing out suds, it leaves behind the dirt held by the suds.

The wringer goes on with the process of cleansing as the clothes are removed from one rinse to another, provided the rollers are fed evenly. And have you ever fully appreciated the work it saves you, by transferring wet clothes from tub to tub? This relieves your arms of a heavy load.

Lumps and bunches forced through the wringer are not only hard on the mechanism, but they strain the fabrics needlessly and contribute to the wear and tear. Turn in buttons, buckles or other fasteners and fold some of the material over them to form a cushion. This prevents them from being wrenched off or broken, saves mending and protects the rollers. See that zippers are closed and put through flat, covered with a fold of material as an added protection. All the time the wringer is running, give it your undivided attention, not only for the sake of the machine and the material, but in order to avoid accidents.

If someone asks you a question, stop feeding clothes for a moment. At all times keep your fingers at least six inches from the rollers, otherwise they can easily be drawn in before you realize the danger. Tie something round your head as people have been known to get hair tangled in the mechanism.

Careful operation of the wringer involves keeping an eye on both sides to prevent articles from wrapping around the rollers. Tapes, ties on aprons, loose threads, and raw edges are some of the worst offenders. Make a bow with apron strings and they will not be a bother. Double over raw edges and tuck in tapes and you will save time and irritation. Never let

your attention wander for a moment while using the wringer.

You may think your faithful machine will stand almost anything, but beware! The other day I saw a roller that refused to turn because the rubber had become loosened from the metal shaft. The owner not only had to wring the load by hand, but had to foot the bill for a new roller.

Lint is something that turns up every washday. A lot of it can be avoided by shaking the clothes outside while sorting them. This gets rid of the loose fuzz on heavy underwear and socks, the odd feather in a pillow slip, or the bits of dust brought in from the play yard or field. In any case it is a good plan to shake out loose dirt, but particularly when the supply of water is limited, as the suds stay clean longer.

Then there are the bits of thread from torn edges and raw seams that are continually being deposited in the wash water as the suds do their work. Many are never noticed on white clothes and are blown away as they flap on the lines, but on solid dark colors the specks are a nuisance. Long threads that tend to wind around the rollers are not only an aggravation but may be dangerous.

Paper hankies are a boon to the homemaker, but if left in pockets the water breaks them up into lint. To avoid this trouble, check each pocket as you sort the wash, and use a whisk to remove loose particles that collect in the bottom. This prevents bits of paper from being deposited on other things and does away with the ugly grey line at the bottom of pockets.

Sometimes you may wish to draw off water from the bottom of the machine before adding more hot water and soap. Don't do this while clothes are in the washer or they will act as a sieve and will strain out quantities of lint and soil which will spoil the look of your wash.

LINT of some types is so small that it is not readily seen. It is the result of the gradual destruction of the threads of which the material is woven. Threads consist of countless fibres twisted together. During wear they gradually break down and tiny bits leave the cloth as it is swished around in the suds. In the days when a washboard was used with vigor, the amount of lint produced was much greater than in a modern washer.

The soap used can also contribute to the general breakdown of fabrics if it is harsh and loaded with chemicals. Certain alkalies roughen yarns, others cause them to become brittle, and eventually the material goes to pieces. Lack of sufficient rinses permits chemicals remaining on fabrics to become concentrated on the yarns as they dry. You may not see the chemicals working, but the damage goes on the same.

This is the case with strong soaps and washing powders, but it is doubly true with bleaches and spot removers if the water supply is short. To get rid of the chemical you must rinse, rinse, and rinse again in order to remove every last trace. Even a tiny bit can go to work on fabrics and gradually contribute to the wear.

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¼ tsp. pepper
1 egg, slightly beaten

Combine all ingredients, chill. Shape into desired croquettes. Dip into flour, then into slightly beaten egg to which one tablespoon water has been added. Then roll in corn meal. Fry in deep hot fat until brown. Drain on absorbent paper. Serves 6.



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No. 628—The neckline you choose for this frock will determine its mood. You'll like its dolman sleeves, its huge pockets and the deep pleat in the skirt. Sizes 12, 14, 16, 18 and 20 years; 34, 36 and 38-inch bust. Size 16 (34) requires 4½ yards 39-inch fabric. Price 35 cents.

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628

630

No. 634—Combined dress and jacket. Gypsy-collared dress has a cummerbund and zips up the back; jacket has dolman sleeves. Sizes 12, 14, 16, 18 and 20 years; 34, 36 and 38-inch bust. Size 16 (34) requires 3½ yards 35-inch fabric; ¾ yard 35-inch contrast for the dress. Price 35 cents.

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644

634

646

635

643

Blouse
1826

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A Carnival Party!

Have one for fun or profit

by WALTER KING

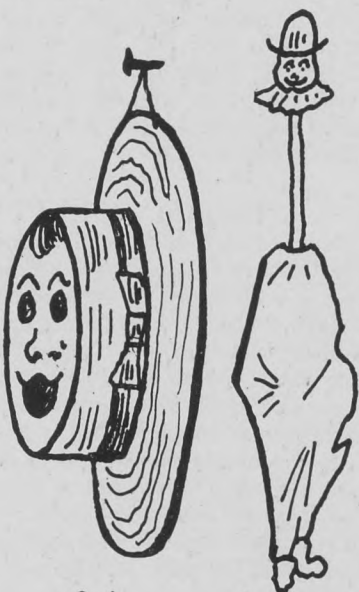
A MINIATURE carnival at your next party with "all the sights of a fancy fair" will be just the thing to give your friends a new thrill. Or, if you have a live-wire club, you could get together and put on a pee-wee circus that will net you a tidy sum for your funds.

If your carnival is for fun only there will be no charge for your concessions unless you wish to issue paper money to each guest. But if you are out to raise money for some worthy cause you can charge anything from one cent to a dime for each sideshow.

Bill the big event as the "Carnival of Fun." The main point to remember is that you must give it carnival flavor by imitating all the important features of the big midway show.

First, you should have something to sell: home-made eats, lemonade, popcorn, novelty items, etc.

Next, there will be the games of skill arranged along the midway. Suggestions are: (1) Tossing fruit jar rings so as to make them stay on the seat of a chair placed about ten feet from the throw line. "Only five cents for five throws!" your barker yells, "A cent back for each ring that stays on the seat and a grand prize if you get 'em all on!" It looks easy, but you won't lose anything. And keep yelling. A big noise is half the fun. (2) Tossing 52 playing cards, one by one, into a dish pan placed only six feet from the throw line. Let the customer give you as much as he likes up to 25 cents and offer to double his money if he can get at least half the cards in the dish. It takes a genius to do it. (3) Tossing ping-pong balls in the hat. If possible, use an old straw hat marked as shown in the picture. Sell six balls



Hi!
HIGH-EYE! CARNIVAL CLOWN.

for a dime. Give a small five-cent prize for each ball in the mouth and a big 25-cent prize for a biff in the eye. The hat should be hung up at shoulder level about eight feet from the throw line. (4) Spike hammering contest. This is chiefly for men and boys but sporty women and girls will always try their hand at it. The idea is to win a prize by hammering a six-inch spike into a log in three blows. (5) Dot guessing contest. Paint about 700 dots of various sizes and colors on a huge piece of cardboard and have your customers guess the number of dots



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GF-249



without touching the board. The closest guess wins a prize.

THERE should be at least one "catch" booth. For this you require a separate room, a tent or a screened-off place. Advertise the show as the "Moving Picture Palace" starring two favorites such as Bob Hope and Dorothy Lamour. Inside you have two big pictures of the stars selected hanging up on strings. When the customers get inside you start the pictures "moving" by jerking a cord attached to the strings holding up the pictures.

On the midway, instead of the smart fellow who guesses your weight or your age, have each visitor guess his own waist measure. For this stunt you give the customer a piece of string and ask him to form a loop the supposed size of his waistline. Correct to within two inches wins a prize.

A few circus freak novelties can easily be rigged up for the sideshows. A boy on stilts for the "world's tallest man," a long-haired girl for the "woman with the horse's mane," two painted bare knees for the "See-my-knees" twins, and a mirror in which you claim the visitors may see "the human being with a monkey's face; the only one in captivity!" Five or ten cents does for the whole sideshow.

As an added "free attraction," you might have an exhibition of handicraft work, old coins, war curios, or other collections.

You will see from this that there is no limit to the variety or fun you can have at a pee-wee carnival or party. If you are going to make a charge for the fun, don't forget to advertise the event. Get out some bills and dig up the customers. Ballyhoo the affair thoroughly. And on the day of the fun, have some noisemakers ready ... both human and artificial. Surprising how much better people enjoy themselves where there is noise.

For your birthday garden party or even the indoor get-together, you will be able to pick out quite a few of the above stunts that will give the event new zest. And, of course, the stunts as well as the fun, will be entirely free for all.

Helpful Hints

Many readers keep all the issues of The Country Guide, as I do. Possibly they will be interested in my method of having a handy reference to articles published. I clip the "index" from each issue, paste it on a letter-size page. Then I file these pages in order as they come in a loose-leaf notebook. Keep the magazines stacked in order, with the latest on the top of the pile. You then can easily and quickly look up any given topic by reference to the "index file."—Hazel M. Tatroe, Edmonton.

Do not throw away old lipsticks. You will be amazed to see how much lipstick remains in the tube, when you think you have finished with it. Run a needle around the side of the remaining portion and remove it. Fill the space partly with melted paraffin. Then press the remaining lipstick into place. This method ensures a greater amount of lipstick from the purchase you made.—L. P. Bell.

When writing with ink, one sometimes makes an error or blot. It is a good thing to know that a toothpick, dipped into your laundry bleach solution, rubbed lightly over the error will erase it like magic.—L. P. Bell.

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Solving Beauty Problems

There is much you can do in small but important ways to ward off major damage to good looks and carriage

by LORETTA MILLER



Anne Crawford, lovely English star, believes in regular beauty care.

TODAY'S girls, regardless of age, are determined to overcome minor faults to their appearance before they call for major corrective measures. If the old adage, "a stitch in time saves nine" is true, then it is just as true that "a step in time helps save good looks." Often it may be a little step, to be sure, that makes the difference between beautifully lustrous and dull, lifeless hair. Or remembering to stand correctly may mean a beautiful figure and queenly carriage.

Here are some answers you are certain to find helpful, either now or later, either for yourself, a member of your family or a friend.

Question: My greatest problem, as far as my appearance is concerned, is my posture and figure. I'm very round-shouldered and my entire back seems crooked. When I sit down, I have to make a real effort to push my back against the back of the chair. Can and will you please help me?

Answer: Now is the time to help yourself. It will require concentrated effort on your part, but every time you sit down, remember to sit as far back in the chair as possible. Then stretch upward at the waistline and push your back against the back of the chair. Straighten and raise your shoulders as you sit back and stretch upward. This is vitally important to your figure, posture, and eventually to your health, because right posture permits every organ to function normally. Here is an exercise which you should repeat at least twenty-five times every day: stand with your back against the wall, heels about five inches out, toes pointing straight ahead. Count five as you push back the upper part of your body against the wall. Relax, then count five as you repeat the exercise. Most important! Remember to sit, stand and walk correctly.

Question: My hair is dark brown streaked with grey, my sister's hair is steel grey and our mother's hair is snow white. We would appreciate it very much if you would tell us how to prevent or remove the yellow from our hair. We have tried many different shampoos, but our old problem con-

tinues. Does sitting under a dryer at the hairdresser's cause this trouble?

Answer: Answering your last question first, there is no truth, whatever, to that oft-repeated story that the heat from the dryer makes grey or white hair yellow. This condition is generally caused by an acid condition brought on by incorrect eating habits. Only a doctor is qualified to diagnose and outline one's diet. To overcome the discoloration, however, do this: strain the juice of one lemon into a glass of warm water and to this add a few drops of special hair bluing. Such bluing may be purchased from your local drug or department store, and complete directions come with it. However, to give lustre to the hair as well as remove the yellow, combine the bluing with the lemon juice and pour over the hair. Then rub your fingers through your hair to distribute the application. Finally pour a glassful of warm water over your hair, then use a Turkish towel for partially drying it. Use this rinse after every shampoo.

Question: Now that winter is here, so is my chapped, rough skin. My skin seems to be peeling and makeup looks so artificial and garish. This is a yearly problem and I would appreciate having it solved once and for all.

Answer: Use more lubrication on your skin. After washing your face with soap and water at night, rinse off all soap and dry well. Then smooth on a liberal application of any good lubricating cream or oil. English lanolin or pure cocoa butter is excellent. (The latter is probably easier to obtain.) Smooth this thoroughly over face, throat and hands, and let remain on until morning. Then, after washing your face (if this is your general habit), use a light coating of the lubricant before putting on your makeup. Try not to use soap and water just before going out in the cold, instead use the cocoa butter for cleansing and lubricating purposes. Your skin may not respond to this routine for a week, but the daily use of a lubricant will put an end to this annual cold weather problem. Of course you won't need this in warm weather.

Question: I have been told that the repeated use of creams and oils on the face will cause hair to grow. As I am a brunette, I certainly do not want to do anything that might encourage this condition. What do you suggest?

Answer: There certainly is no truth whatever to this old and too-often repeated tale. If creams would encourage the growth of hair, you can be sure there wouldn't be a bald-headed man in the world. Any grease will make the little fuzz glisten so that it may be more noticeable, but it will not encourage its growth.

If you want to nip all minor beauty complaints in the bud to preserve your good looks, use preventive measures to ward off major damage to face, figure and hair.

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AD 57

Curio Collecting

Many entertaining hours may be spent in the study of odd or old collections, or we may find much interest in starting a hobby collection of our own

by HENRIETTA K. BUTLER

TUCKED away in most homes are some curios. Do you remember that even as a child you loved to hoard small, interesting objects and you would proudly bring out a little bit of curiosity to show your friends. Every mother has seen the marvellous things that come out of a boy's pocket. The story of Tom Sawyer and his trinkets is repeated every day by the average boy. Girls enjoy collecting different forms of curios.

The collecting habit begins in earnest when the hobby stage arrives. The energy and ability of youth can be directed through inventive and creative channels. The boy or girl collects, or develops a passion for making something better or different than anyone else can make.

As one grows up, collecting takes many forms. There are curios in the botanical world, and so the gardener may also become a collector of curiosities. Perhaps the cactus and succulent plants provide the greatest variety of quaint or unusual vegetation. Some housewives like to display as many cacti as possible, while specialists make a hobby and a living by collecting and selling these odd-shaped plants with their strange habits, specimens which they have imported from Asia, South America, Mexico and Arizona. There are many new discoveries among rockery plants, in the vegetable garden, shrubberies and orchard, which the grower feels he would like to try at least once.

In the animal world too, among pets and poultry there are novelties, and so we find the fancier raising odd and unusual dogs, cats, chickens and birds.

For a curiosity, the poultryman breeds and raises ornamental bantams, miniature specimens of the domestic fowl, marvellous and beautiful in many varieties. Or the breeder may go in for some of the less known kinds, such as Cornish, Dorkings, Polish, Hamburgs, Houdans or others equally new and strange.

Now for a few curios we find in homes.

HIDDEN away in a cupboard may be a proud old possession, the Family Bible. One I am thinking of, is sheepskin bound, in old-fashioned type, with the corners of the pages yellowing and much thumbled. A strong, mouldy smell issues forth as you turn the pages. Yes, there are the names of someone's forefathers, written with painstaking exactness in ink, long ago faded but still discernible. Someone was artistically inclined, for many of the capitals are in the Old English lettering. Many of those Susans and Lucys or Josiahs and Edwards lived 150 years ago or more. You marvel as you read, that they were born, married and died even as people of today. There may be other musty old books among one's esteemed possessions, probably a "Robinson Crusoe" or "Pilgrim's Progress."

Do you remember seeing the "work-box?" Two centuries ago or even longer, it was part of a girl's education to make a workbox. There is a record of these cabinets being made in 1654. Those charming pieces of handiwork differed in style according to the period. Some merely stood on a table, others were large enough to have legs of their own. As a rule all were exquisitely adorned. The inside was divided into compartments for needles, threads, silver thimble, wax, pretty silk pincushion, scissors, perfume and ink bottles. There were also little drawers to pull out, in which were hidden many personal treasures.

These work boxes were made of the best obtainable material, often rosewood, papier-mache or alabaster, according to the fancy of the owner. There might be hand painted birds or flowers on the lids or sides, with inlays of mother-of-pearl.

Ladies of the 17th, 18th and 19th centuries had more leisure time than we of the 20th century. Their fancy-work consisted of making delicate and painstaking articles. For example, the feather work, the crewel wool pictures, hair ornaments, pictures in hair (under glass), the shell work, and bead and bugle embroidery. Some of these took years and years of patient, fastidious toil.

SHELLS in themselves are beautiful things, but when brought into design, they make charming decoration for boxes, picture frames and cabinets. These relics may still be found among antiques. This form of art is still being followed. Some people I know make a pastime of creating shell ornaments for the tourist trade.

Our grandmothers' and great-grandmothers' dresses were heavily embroidered with beads and bugles. Their bosoms literally gleamed and glittered with black beadwork as did their Sunday capes and bonnets.

It is popular custom in Canada now to collect Indian work: totem poles, baskets, trays, moccasins and sweaters. It is good that it should be so, for it helps our Canadian brothers and sisters to earn a livelihood.

There is a great deal of pottery now on the market, American, Canadian and Mexican. These vases or tableware are gay and useful, and make good souvenirs or presents. Then there are those miniature glass figures, so dainty and frail, intended probably for newly-weds or households without small children. Much to be admired are the heavier, shimmering glass ornaments, and the exquisite models of birds and animals in china.

There seems no limit to the collecting craze. We hear of collectors of fancy and odd jugs, fine and old laces, gramophone records, stamps, and so on and so on. If you are a curio enthusiast and want to see large collections, you should visit public museums, whenever you have a chance.

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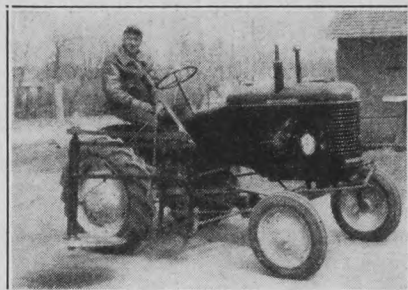
GENUINE PEARSON'S



Brush Cutter

Machine makes tree clearing easy

ALTHOUGH clearing brush and scrub with an axe does keep a man warm, there are quicker, easier ways. John Beck, of Portage la Prairie, Manitoba, adapts his small tractor and attached mower for the job. The cutter bar and pitman are removed from the mower. An auxiliary shaft is mounted in their place. This shaft turns in ball bearings and carries one pulley at the bottom driven from the power take-off, and one at the top to drive the saw shaft. The latter is carried in a regular saw mandrel



The brush-cutting saw is very portable.

which is supported by two braces from the auxiliary shaft mounting. A handle from the mandrel permits the operator to move the saw out from the tractor and to pull it back closer as required. All drives are through double V-belts.

The builder claims the unit will cut 12-inch trees with little difficulty and is very maneuverable. Raising, lowering and tilting are controlled by the mower levers.—R.G.M.

Appetite for Riches

Something new in prospecting

A CLERGYMAN in South Africa recently noticed a thin layer of gold on the teeth in a sheep's head which was being prepared for the table, and soon prospectors were hurrying to the farm whence the sheep had come.

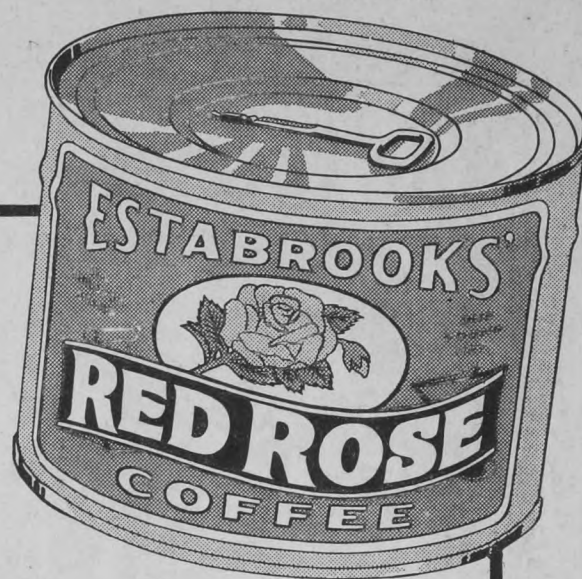
A few years ago a sheep was found in South Wales with glittering teeth, but there were unkind suggestions that this animal had been chewing a lost cuff-link. That might be called skepticism.

There is also cynicism. During one of the between-the-wars depressions, when Czechoslovakia had a glut of turkeys, someone reported that he had found gold in the gizzard of a turkey. The sale of turkeys improved, but no one else found gold, and the matter was later thought apt for recollection when gold was reported from the gizzard of a goose in British Columbia.

... There is also a flavor of cynicism in a mocking English suggestion that the South African sheep might be an advertisement for (or against) American dentistry. This may be treated with the contempt which it deserves.

But the skeptics, the cynics and the rest of the worldly-wise are sometimes wrong. In Australia, in the past, the glittering teeth of sheep have indicated unsuspected outcrops of gold. And the chance discovery, by a South African hunter many years ago, of a diamond in a wild ostrich's gizzard was important, not least to wild ostriches. About 10,000 were shot in the next six months. All things considered, sheep and ostriches might be well advised to abstain from gold and diamonds.—J. D. U. Ward.

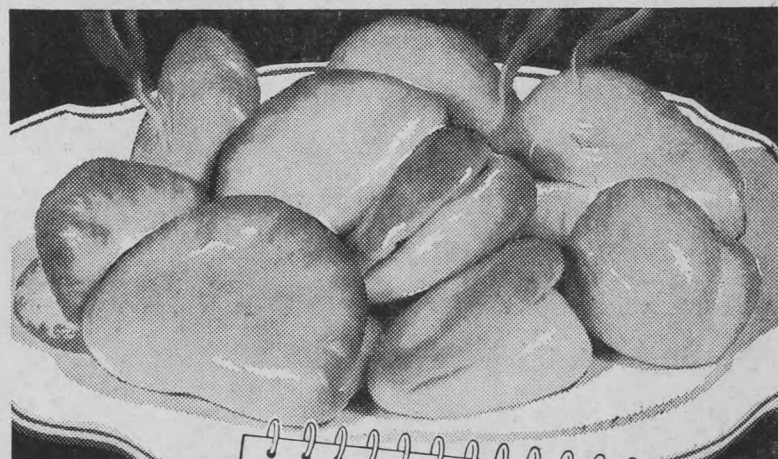
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| 2 tablespoons lard or butter melted | 2 cups milk scalded and cooled |
| | 6 cups sifted flour |
| | 1 teaspoon salt |

Dissolve 1 teaspoon of sugar in ½ cup of lukewarm water. Now add the contents of one envelope of HI-DO and let stand 15 minutes. Beat to a smooth batter the lard or butter, sugar, salt, milk (2 cups), and half the flour (3 cups). Now stir your yeast and add it to the batter. Beat slightly then add balance of flour (3 cups). Mix dough until smooth. Place in greased bowl, cover and let rise until double in bulk. Punch dough down in bowl and let rise again for 15 minutes. Roll out ¼ inch thick. Brush lightly with melted butter, cut with biscuit cutter, crease through centre with dull-edged knife and fold over. Place on well-greased pans (1 inch apart), cover and let rise until light. Bake 15 to 20 minutes in hot oven.

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Wonders Of The Tree-World

Some famous trees here and there

by FRANK A. KING

THE musical tree is to be found in the islands of the West Indies; it has a peculiarly-shaped leaf and pods with a split or open edge. The wind passing through these forms the sound which gives the tree its strange name.

In Barbados there is a valley filled with these trees, and when the trade-winds blow across the island a constant, moaning, deep-toned whistle is heard from it, which, in the still hours of the night, has a very weird and unpleasant effect.

A species of the acacia, growing abundantly in the Soudan, is also called the whistling tree. Its shoots are frequently distorted in shape by the agency of insects, and the shoots become swollen into a small, globular bladder. After the insect has emerged from a circular hole in the side of the swelling, the opening, played upon by the wind, becomes a musical instrument equal in sound to the flute.

In the great forests of Nubia grows a tree from which, when swayed by the wind, come strange sounds, like the notes of a penny-whistle. This vocal tree is regarded with some superstitious awe and terror by the natives, and it was a puzzle to everyone who had heard the mysterious sounds, until some scientific traveller investigated the matter. He found that at certain seasons of the year hordes of insects deposited their eggs on the young shoots and extremities of the branches. These produced gall-like excrescences about an inch in diameter. When the young insects emerged, small holes were left in the galls. The wind, blowing through these holes, caused the strange noises. This, probably, is the only instance of a tree which bears ready-made whistles; it is called the "tssofar."

The largest tree in the world is the great chestnut tree at the foot of Mount Etna, which is called "The Chestnut Tree of a Hundred Horses." Five enormous branches rise from one great trunk, which is 212 feet in circumference. A part of the trunk has been broken away, and through its hollow interior two carriages can be driven.

Possibly the most curious trees in the world are those growing on the slopes of the Andes, known as

blanket-trees, because blankets are made from the bark. Each blanket is over six feet long by five feet wide, and is as soft and pliable as one made of flannel. The Indians make a cutting around the trunk to get off the strip of bark, which is prepared by soaking it in water until it is soft and pliable. It is then pounded so that the rough outside can be stripped off and the inside alone remains. The inside is of fine fibres so joined together by nature that it makes a beautiful blanket, warm and soft, and it can be carried in a strap without hurting it.

ALTHOUGH not a tree in a forest, the most costly tree in the world is the plane-tree which grows in Wood Street in the city of London. The poet William Wordsworth referred to this tree in his verses on "Poor Susan." It occupies space which would bring in an enormous rental each year. This famous tree marks the site of the church of St. Peter-in-Chepe, which was destroyed in the Great Fire of London in 1666. The terms of the leases of the low business premises surrounding it are said to forbid the erection of another storey or the removal of the tree.

In the town of Kos, the capital of the small Turkish island of the same name lying off the coast of Asia Minor, is what is generally believed to be the oldest tree in the world. Under its shade Hippocrates inculcated his disciples in his methods and views concerning the healing art over two thousand years ago. Tradition carries the tree in age back to the time of Aesculapius, of whom Hippocrates was a lineal descendant, which would add some four hundred years to its age. A great part of its trunk is built round, and there is a fountain known as Hippocrates' Fountain. The circumference of the trunk is thirty feet, and there are two main lower branches which are supported by masonry columns.

In some of the Malay Islands coconut palm is robbed in a curious manner. An enormous crab is found there which lives on the fruit, climbing the trees and tearing off the nuts, either hurling them down or breaking them by ripping off the husk, and then beating them against the rocks with its huge claws. The husk that the crabs take from the fruit they carry



Trees of considerable size may be transplanted if care is taken to keep intact a sufficiently large ball of earth.

to their holes at the foot of the trees, and make a bed of it, and, knowing this, the Malays visit and rob the crabs once or twice a year, using the husk to weave into mats.

IN Tokyo are to be seen some freak dwarf trees two feet or less in height, which grow in porcelain vases. These are not natural curiosities but are trained to become miniature though perfectly proportioned trees of various species, some of them, according to the labels, being over two hundred years old. They are the results of careful culture. At an early age the roots are planted in small pots, and the upward growth is interrupted continuously, and is forced to grow horizontally, spirally, and even downwards, being secured in these unnatural positions by strings and sticks, which become plants, and the care of these miniature trees is handed down from father to son.

Probably one of the most remarkable curiosities in the tree-world is the twin-tree growing in the province of Loire, in southern France. This marvellous freak of nature consists of two healthy trees, some twenty feet high, with brilliant foliage, the top one actually growing upon the lower. A cavity was formed in the upper trunk of the bottom tree, which was filled with decaying bark and accumulated dust and debris of the years. This became a sort of bed from which sprang the roots, and, in time, produced the upper tree. Contrary to all laws of nature, the life of the original tree has not been injured in the least by its parasite companion on its top. But the top tree is a lime and the

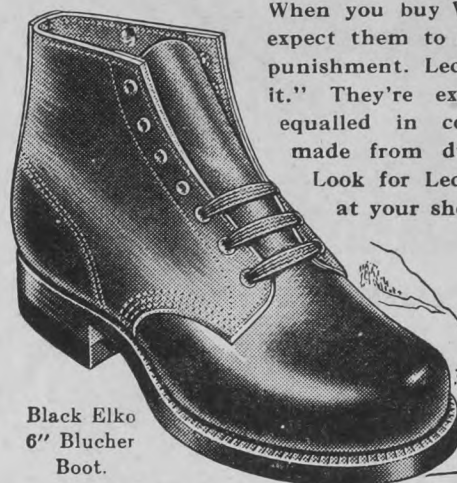
peasants in the district make occasional pilgrimages to this tree, and they make a sort of tea from the nuts of the lime, which, they say, on account of its peculiar growth and situation, has mysteriously beneficial powers when imbibed. The lime is firmly rooted in the lower tree, having withstood the ravages of the wind for many years, and seems to be nourished as well as if it were growing in the natural soil of the earth.

The Avenue Louise in Brussels is lined with chestnut trees, and an electric tramway runs along one side, but, strange to say, the chestnuts on that side lose their leaves in August, then bud again in October, while those on the other side keep their foliage till the end of the year, and only bloom again the following spring. It is believed that the electric current of the tramway, passing through the ground, affects the roots, and causes the abnormal behavior of the trees.

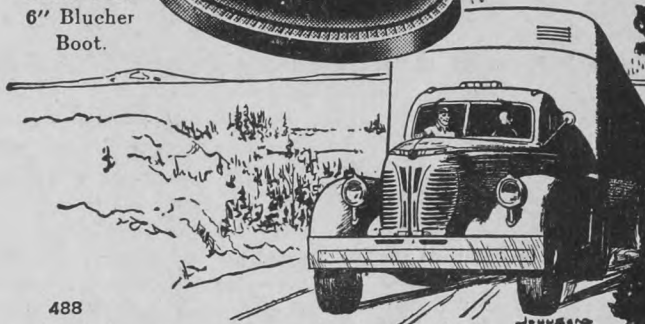
Crude lacquer is the juice obtained from a tree which grows extensively in Japan, bordering the fields, and planted in spaces which cannot be more profitably utilized. It grows to a height of fifteen to twenty-five feet, and in the autumn the numerous pinately-divided leaves assume a brilliant yellow hue, the beauty of which hides the ungainliness of the trees. In the summer the ends of the branches are laden with the grape-like clusters of a furrowed fruit, which contains a considerable quantity of what is now inaptly termed "vegetable tallow." The tree is propagated by means of cuttings, and is in its best state for the production of lacquer when it is from ten to twenty years old.

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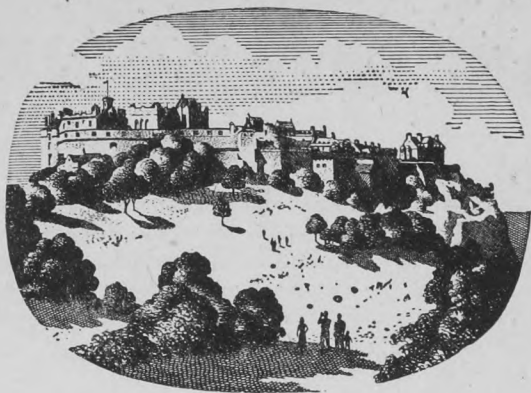


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Clouds

Continued from page 19

of the plantation he had got the big old home, this one picture, not much more. The land he had bought from his brother Charles, who now ran a plantation supply store in Delta City. The big fire crackled.

I heard my memories talking.

BETTY had said, "Go ahead and marry Leigh Merrill because you love him. I have no quarrel with old-fashioned true love. Leigh's a grand boy, all right, even if he does hail from a long line of decadent ancestors. Only he's poor."

I hated her when she said that. "Let him be poor. He is mine. He has something riches can't buy. Money's not all, nor the things you get with it. You'll see some day."

Betty rose dreamily from the bed and came and fixed my dress and hair so that I seemed beautiful in the mirror. "Don't be so swift to condemn me, dear," she pleaded, and she was genuine. "I know money is not all. But we have wanted it so badly and so long, and I am sick of the lack of it." She turned eyes up to me that were brimming with something for which I had no name. Tears, and something else.

Thus I recollected not the tranquil years of living together we did but these high moments of hate and love. Not the long nights and calm days but the banks of dream-clouds over the daisy hill, and the sky so deeply blue it made something in you ache for beauty. I knew what Betty wanted. I wanted it too. Our quest took us different ways.

I heard the car stop at the front gate. I went to the window. Leigh's two sisters, Lucy and Martha, got out and started in. Lucy was the youngest of the Merrill family. She was slim and charming, with a flair for amateur acting. She was play coach in the Delta City High School. Martha was settled, two years older than Leigh. Her husband, Paul Marks, was Charles Merrill's partner in the supplies business in town. They had a big turnover but never seemed to make very much money. Nobody in the cotton country was making money these days.

Lucy burst in, "What's this we hear about marrying into the millionaire class?"

"Leigh told us about your sister Betty," Martha said. "So we thought we'd come out and see if we could help."

I sat on the creaky couch. Lucy simulated a swoon, sinking down, covering her eyes. "To think that any member of our family, even by marriage removed, should become polluted with enough money to live on, let alone millions!" She sat up. "Listen. I have an idea. I told Martha about it, coming out. Your sister and this Mr. Sedgewick will be here for Thanksgiving dinner. You've got to have the Merrill silver. The Merrill antiques. The Merrill portraits. I'll see that Paul and Charlie furnish the rest of the stage-trappings." She stared around the room. She shut her eyes almost shut, imagining it. "We'll light fifty candles, a hundred candles. I mean since there's no electricity. Martha will take over the kitchen, won't you, Mart?"

"Yes," Martha said.

"I'll serve. Put on my little white

French apron and mix my French with a Southern accent, and put on an act that will knock this millionaire smack between the eyes." She made a dramatic gesture.

I felt fire burning in my eyes. That was the answer to all my perplexities. It would be but for a few hours, overnight at most. The grandeur of this old home could be restored. The old things, and the new borrowed from the store. Martha's good cooking and Lucy's style—I would get Ceelie, the colored girl, for the rough work—I could see myself the gracious hostess. Leigh the fine young Southern gentleman—it had to work!

I had been desperately jealous of Betty. Even now I was desperately afraid.

Thanksgiving Day came to a close with cold wind that broke the clouds and let the cold fires of the winter sunset break momentarily through. Then the big car was there at the gate.

"Take it easy," Leigh laughed, putting his arms around me. We went out to meet my sister and our new brother-in-law.

A short discussion was going on. Betty had just said to the chauffeur, "Arnold, you'll wait for us at the hotel. We'll start at eight in the morning."

The deep voice countermanded the order. "Come back for us at ten tonight, Arnold."

The man tipped his hat. It was like a movie scene. "Yes, sir, Mr. Sedgewick."

The car went away. The man and young woman came up the walk. I caught Betty in my arms, felt all the warmth and softness of her. Here were all the memories I had revived of her.

I babbled like something half crazy. I was never very good in such scenes. Betty said, "Jude—Leigh—this is my husband, Jonathan Sedgewick. Jude's husband," she added, "is one of the Merrills." There was pride in her voice. The Merrills!

We went into the living room. I saw the headbeams of Martha's car and knew she and Lucy were back. In the light of the hickory-log fire and many candles, I tried not to stare at my new brother-in-law. I'd not seen Betty for six years. I suppose we made a tableau, seeking to hide our curiosity but staring in spite of all.

MR. SEDGEWICK was sixty—older than I had expected. He was faultlessly dressed. There were bags of distinguished flesh at his jowls. His hair was still black but mixed in streaks with grey. His eyebrows, black and beetling, had a youthful and sinister effect. There was quality here—I could feel and see it. Not the kind Leigh had, for instance; but a hard, inflexible character all its own.

I thought of Leigh's eroded land when watching Sedgewick's face, and I remembered that beneath the washings there was hard-pan subsoil. I saw it here, too.

Betty was talking nervously, explaining. "We are a little late. We stopped in town at the hotel to freshen up." She added, a little low in my ear, "Mr. Sedgewick hasn't got accustomed to our rural hospitality. He thought it best to register at the hotel. You won't mind? I had wanted to spend the night. But we'll have to go a little early."

I took Betty's wraps, and she followed me to my room. She was so



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young and glowing. Betty was twenty-five, I remembered. Now she was trim, slim, elegant. She wore some rather large rings. I caught the small fireflies of diamond luster. But she wasn't overdressed. She was almost, not quite, right. She was soft, like a kitten; you knew she was pampered without being spoiled. Jonathan Sedgewick would not spoil a young wife—no. He would give her all she wanted, everything she asked for, but he would do it with deliberation and a word of caution and counsel.

Betty dropped on a chair. "Where is your little Junior?"

"Martha—that's Leigh's sister—has him. She'll bring him home in a few minutes."

Then Betty looked into the fire. Her animated face dropped in repose. I saw for the first time the hardness, almost a ferocity, that took its place.

Jonathan Sedgewick was saying to Leigh as we rejoined them, "This is a very old place of yours, Merrill."

"My family settled it in 1799."

"You've kept the house in good shape, at least on the inside. I thought, as Mrs. Sedgewick and I drove out, that the farmlands were in rather bad shape."

"You should have seen the land when I took over."

"You're rehabilitating the farm, my wife tells me."

"I'm trying. Not doing it very fast. It's still mostly a dream or hope."

MARTHA and Lucy were busy in the dining room. I kept watching Jonathan Sedgewick. I wanted to like him. I wasn't sure that I did. You know how it is with some people—they have succeeded, they have money, they are accustomed to respect and obedience. When they speak their word is final. Everybody says, "Yes, sir," and backs out bowing. My brother-in-law was just like that. While we waited for dinner he talked of the war; he discussed the economic situation of the South; he knew much about the sharecropping situation; and he disposed of everything when he had stated his opinion. While he talked he looked at Leigh. At rare intervals he would include me in his audience. He evidently held women in no high esteem when it came to important issues that concerned men. As ornaments, of course, it was different.

All the while he talked Betty sat there smiling, nodding, glancing at

me to see if I approved of his ideas. But now and again she unconsciously dropped out of character and then that hard glint came to her, and she wove her hands. Once she caught me watching her do and undo her slim fingers. She made herself drop into repose. She seemed to be sitting on the edge of nothing most of the time.

Lucy opened the folding doors into the dining room. She stood aside as I led the way into dinner.

At that instant—and it was a kind of planned bright moment, the hand of Lucy and her dramatic instinct, I knew—Junior burst from the kitchen, ran to me, flung his arms about my neck and kissed me.

"Mother!" he cried. "You are beautiful."

It was more than I had expected even from Lucy, whose dinner dress I was wearing. "Why, darling," I said, and grew warm and happy.

"Well, of all the sweet things!" Betty exclaimed in rapture, and grabbed my baby in her arms, knelt, hugged him, put him away and looked at him, up and down, all over. "Sis, I'm going to take him away from you!" She hugged him hard again and made small gurgling sounds.

At all this Jonathan Sedgewick looked benignly, a little patiently, as if women had to be indulged, especially when in company. There are moments when you see the soul of a person. I saw one side of my brother-in-law's soul then. He was a man without fun or much humor; he had never been moved by the way of a child.

We sat down and I watched how Jonathan Sedgewick placed Betty's chair. He did it with elegance. These small outward formal tokens, all of them, he practiced before the young beauty of my sister. But he never shared an idea with her. A baby had no effect upon him at all.

As dinner progressed Mr. Sedgewick ate heartily. Once, almost in consternation, when Sedgewick accepted another helping of turkey, Betty protested, "Remember what your doctor said, Jonathan—"

He frowned. "Nonsense!" he stated, and took a little more white meat. One knew after a couple of hours he would have to go for the bicarbonate. Some day, maybe not so long, it would be a stroke perhaps, years of invalidism, something like that. I



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Sun Life of Canada Increases Dividends to Policyholders

1949 was a good year for Sun Life. Total benefits paid last year \$114 million. Company largest investor in Canadian homes under National Housing Act.

With \$18 million—a substantial increase over 1949—allotted for policyholders' dividends to be paid during the current year, the Sun Life Assurance Company of Canada enters its 80th year of public service with a promising outlook for 1950. During the year just past, the total amount of life insurance which policyholders purchased from the Sun Life exceeded \$372 millions, continuing the unbroken record of selling more new life insurance per annum than any other Canadian life company. Insurance in force with the Sun Life now amounts to \$4,187,000,000, an all-time high. Total income of the Company in 1949 was \$238,000,000.

The 79th Annual Report of the Sun Life of Canada just issued indicates that benefits paid to Sun Life Policyholders and beneficiaries since the Company's first policy was issued in 1871 have now reached \$2,240,000,000. Last year alone over \$114,000,000 was paid out in benefits. In recent years the Company has given particular attention to providing funds for the construction of homes, and of its total assets which now exceed \$1,527,000,000, more than \$83 millions is invested in Canadian residential mortgages.

At the Annual Meeting held at the Head Office of the Company in Montreal, the President, Arthur B. Wood, reviewed the remarkable progress of life insurance over the last 50 years. In 1900, with a population of just over 5 millions, total life insurance in force in Canada amounted to \$404 millions, or about \$75 per capita. Today the population has reached 13½ millions but life insurance in force has risen to \$14 billions, or \$1,045 per head, more than 13 times the 1900 figure. The Sun Life's own

business has more than kept pace with this increase, today's total in force of \$4,187 millions comparing with only \$53 millions in force at the beginning of the century. During these 50 years, too, Sun Life policy provisions and privileges have been broadened, available options increased and many new benefits introduced. Even before 1900 the Company was the first to introduce the "unconditional" policy, following later with the popular Sun Life non-medical insurance plan. The Company also issued the first Group Pension policy written anywhere in North America, an epoch-marking event in the history of life insurance.

One of the outstanding features of Sun Life operations during 1949 was the pronounced increase in the Company's Group business. Hundreds of thousands of office, factory and other employees in business and industry throughout Canada and the United States are today protected by the generous terms of the Sun Life Group insurance and annuity plans. The Company's experience and service in this particular field is unsurpassed. Today, the importance of Group insurance is recognized by all those concerned with the encouragement and maintenance of good relations between management and labor, and the welfare and social security of the individual employee.

The Sun Life story for 1949, including the President's address as delivered at the Annual Meeting, is contained in the Report to Policyholders now on the press. A copy will be sent to every policyholder, while others may obtain the Report on request from the Head Office in Montreal or from any of the branch, group or mortgage offices of the Company from coast to coast.

looked at Leigh. He was weather and wind brown, wiry as nails, lean and stripped to brawn and bone. I was glad that he was young.

"I like this house, this place of yours, Merrill," Jonathan Sedgewick said twice, as if the matter were heavy on his mind.

Once again the serious topics fell under discussion. Jonathan Sedgewick did all of the talking, for he was a man who would dominate a dinner table. In the candlelight I watched the flash of his eyes, the whisk of the craggy brows. He was saying that what the South needed, had to have, was a rural manner of living. What point was there in trying to industrialize it? Take Birmingham, for instance. That was South. But in all other respects it merely duplicated the problems of the North. Now, these efforts of many small towns to get units of knitting plants, shoe manufacturing plants, and garment plants, so as to have the payrolls—well, what was that but exploiting the local cheap labor? They gave it the dignified title of "pure Anglo-Saxon stock." It got down simply to sweating women and girls mostly. At least the field work that once these girls and women had to engage in was in the open air and sunlight.

I WAS thinking, between the booms of the deep, passionless voice, that my dinner was going along beautifully. In the kitchen, unseen, Martha was priceless; and Lucy was simply perfect. Everything was right. The marvelous guests, the candle glow, the service. Betty was watching Lucy, not knowing she was Leigh's sister, perhaps not thinking at all except that here was a jewel of a servant.

Once Betty looked up at Lucy. "What is your name?" she asked her. "Lucy."

"Lucy, would you come to me and work for me?"

There was half a second of startled silence.

"I mean," Betty said, "if I were to pay you excellent wages?"

The silence shut back in. Lucy said, "I couldn't ever think of leaving Miss Jude."

After dinner Jonathan Sedgewick and Leigh moved around the big room, standing and examining each portrait. I was thinking as I watched my brother-in-law, and then Betty, that they would have parted with no small portion of their wealth just to have the background Leigh was presenting. I felt a little stunned.

And I had been so prepared to be jealous and envious! Now I could smile gently to myself at how impressed Betty and her husband were.

It was Junior's bedtime. He came and curled up on Martha's antique sofa and put his head in my lap.

"We'll have to go to bed, darling," I said.

"Let me put him to bed, Jude," Betty said.

Jonathan Sedgewick and Leigh came and sat down. Mr. Sedgewick waved his hand, the hand with the fragrant cigar.

"I like all this, Merrill," he said. "Like it tremendously. How long do you figure it will take you to put this whole place back on its feet?"

"Ten years, fifteen maybe."

"How would you feel about a proposition to do the job immediately?"

"How do you mean?"

I bent forward as the man began to talk like a dollar mark. "Ten thousand dollars, perhaps fifteen, would restore it about as you plan. Twenty-five thousand, I judge, would make it a show place. As I said, I'm tremendously interested in what you have here. It is typical of hundreds, maybe thousands of modest plantations in the South. Maybe not the great show places of Natchez, but the lesser, more typical spots. As you know, my business is manufacturing cotton gins. That puts my finger right on the pulse of the cotton-growing South. I've had in mind some time now getting hold of a place just about like yours and putting it back on its feet, restoring it to something of its pristine grandeur."

LEIGH was staring. I heard myself gasp. For an instant my heart skipped a beat. The way Jonathan Sedgewick said it made a life ambition of ours seem just the twist of a wrist—financial wrist. I saw Betty studying me with odd hot eyes. That was what she wanted—to show me the power of what she owned.

"I've got to put Junior to bed," I said hastily, excusing myself; and I took the sleepy child in my arms and fled from the room.

Betty followed me.

I sat in the low rocker before the fire and began undressing Junior. I got him into his sleepers. Betty sat there by me nervously trying to help. In the living room I heard Jonathan Sedgewick's booming voice. "You would not necessarily have to repay it. After all it would be an investment



"Why, what a coincidence, Mrs. Treeker! I was just thinking about the money I owe you, too!"

in advertising for our company. I would have an interest in the plantation to that extent, quite naturally—

"No!" I wanted to scream. What would there be to live for? What would be our monument then? At least Jonathan Sedgewick had the



"Don't you think you should go around the back and see how you're making out?"

tremendous integrity of self-pride in personal achievement. We had the right to the same kind of pride—the rebuilding of a family name and tradition. I choked my scream back.

For I turned just then and looked at my sister Betty.

There is no use, no point whatever, in trying to pin down certain memorable things you see happen to you, to someone sitting by you. But those moments come. One came to me now.

Betty was reaching for Junior, all glowing, all hungry and eagerness. I would not let her have him. She would have no babe of her own. How I knew this does not matter. The Bible has a word for it. *Apprehension*. Betty knew it. There would never be the sweet and abiding tenderness, the warm joy of holding something so very much her own as a baby to her breast. She had nothing of the things which give married love its tremendous vistas—young love, the love of a man and wife, the integrity of working and building together. Her house was built. It loomed magnificently against the clouds and sky. But the building, the making, would never be hers. In that moment I seemed to see all my sister Betty's life moving empty and meaningless toward eternity.

And I thought I was going to be jealous and envious of her. I knew a profound pity for her. That, not anything else.

"I—don't—think—I'd—be—interested." I heard Leigh's quiet, spaced words beyond the wall.

"You used to love me and hate me both, didn't you, sister?"

I rose, laid Junior gently in his bed, kept my hand touching him until that little last shudder of sleep took possession of him. I tucked in the covers. I took Betty by the hand. We sat before the fire.

"I remember, Betty, the day we ran across the daisy field. You ran up the

hillside ahead of me, ran on to the summit, and there you stood against the deep sky and near the fleecy clouds. You wouldn't come back when I told you not to go there. You said—

"I was going to wrap the clouds about me and spoon the sky up like mint cream."

"And I said that the sky was not good to eat and the clouds forever beyond reach."

So we just sat there.

All at once Betty dropped her face in her arms and wept. I moved close, pulled her head into my lap, tried to fasten back her fast tears. But I knew why she was crying. She knew and I knew.

Betty finished crying her little cry. "It is almost ten o'clock," she murmured. "Mr. Sedgewick is very particular about his schedules."

I carried her coat as we went back into the living room. I touched it lovingly but without envy. Mr. Sedgewick helped Betty on with it. Betty kissed me. I hugged her hard. We went out into the sharp, cold night, star-cut with frost. The car came up as if on the second. It moved away. The light sank, died.

Leigh and I stood there close, our arms around each other. He asked, "Did I do the wrong thing in turning the proposition down? It's closed, you know. He's that sort."

"I have been to the top of the hill, darling," I told Leigh. "I have walked

across the daisy fields. The sky is blue, blue. But the farther you go to meet it the deeper the darkness is. The clouds are white, white. But when you walk into them all is fog."

We went in to the log fire and candlelight, and stood under the



"Eight, please,!"

sombre eyes of all the Merrills. Though my words, my manner, made no sense whatever to Leigh, I knew in a deeper way he understood me and everything I'd tried to say, as I did him. Love, work, youth, understanding—these were the clouds and sky above our daisy world; and maybe after all, the flavor is mint, when you know how to reach what is your own.



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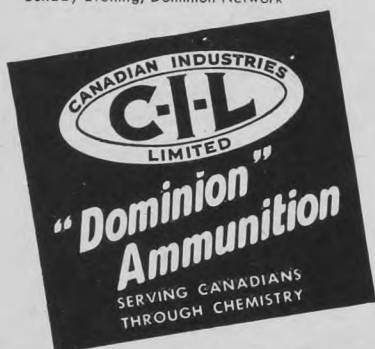
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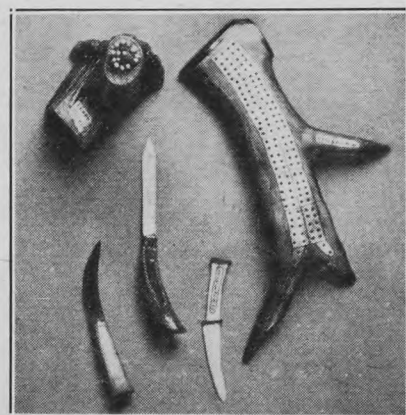
ONE of the most interesting hobbies in Canada is practised by Harry G. Ennis of Entrance, Alberta, a mountain guide who fashions ornaments out of wild animal antlers and horns.

"I use just about everything on an antler but the prod of the point," says Harry, and leads you into his workshop to prove his statement. He has a 32-volt power outfit operating a saw, sander and polisher, but most of his work is done by hand, using a great assortment of meat saws, hacksaws, rasps, files, and sandpaper plus a lot of old-fashioned elbow grease.

"I find the horns while on my trips into the mountain wilds," Mr. Ennis explains. "I find from 40 to 60 sets of shed antlers or horns on almost every trip I make back into the remote mountain country. I'm packing in fishing or hunting parties, or artist fellows who want to paint mountain animals or scenery all summer long. So I've got to go back into the wilds in any case, and that's when I look around and pick up discarded antlers.

"One time I came home with eight pack horses all pretty heavily loaded with antlers, and that gave me a good stock of raw materials that kept me busy most of one winter. I've got a picture of a pack horse called Tag, loaded up with 37 caribou and deer antlers which he packed in 60 miles. To me, he looked like a sort of horsified porcupine."

When you get into the workshop, you begin to marvel at the variety of beautiful and useful ornaments made by Harry Ennis. The smallest novelties are the paper knives, made in a wide variety of styles and of many different antlers or horns. One had an elk antler handle and a buffalo horn blade. Another had a pliable, steel-like blade of mountain sheep horn, fitted to a polished staghorn handle. And there were desk paper weights, some in the form of match holders, cigarette holders, and some fashioned as ash trays. Moose antlers were used extensively to make platters, trays and larger horn objects. There was even a chair made of moose horns, with the palmated portion of the antlers forming the rounded back rest and seat. A pair of fresh moose antlers were fastened into an ash tray of the stand type. Almost everywhere you looked, you could see cribbage boards made of caribou antlers, mountain sheep horns, elk antlers, and deer antlers. Some of these were of great beauty, boards that would be prized by the most discriminating crib players.



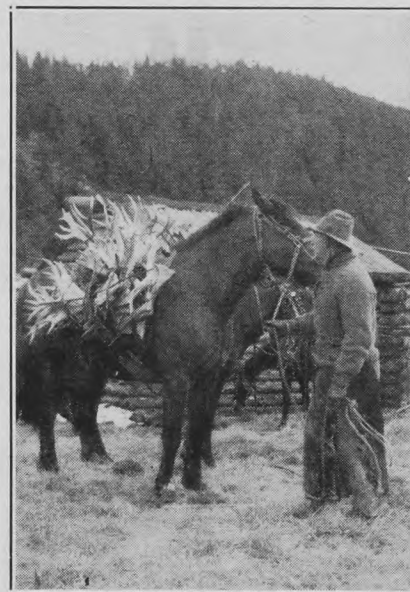
A caribou antler cribbage board, an elk antler match holder, and three paper knives made by Harry Ennis.

Harry Ennis' workshop turns out a wide range of novelties which are in steady demand

by KERRY WOOD

"Cribbage boards are always popular," Harry said. "Last winter I made 127 different crib boards, and I believe I've sold every one. Tourists buy some, while others are ordered by mail and I ship them off to every part of Canada and the United States, even to Great Britain and Ireland. I sent 12 of the best crib boards as presents to 12 of the larger hospitals in Alberta—I've spent a lot of time in hospitals myself, so I know how the time drags for a patient. I thought some of the sick folk might get a kick out of playing cribbage over one of my antler boards."

Hunters who have been guided into the wilderness by Mr. Ennis are keen to have him fit horn handles on favorite sheath knives, and this has become part of Harry's hobby. He has an amazing collection of knives—old Hudson's Bay Company knives, Bowie



Tag, the pack horse, loaded with 37 deer and caribou antlers which he packed for 60 miles.

knives, Swedish and Finnish knives, all adorned with horn handles he has attached himself. He sometimes uses broken hacksaw blades to fashion kitchen knives, fitting on a lovely horn handle. It seems a shame to use one of these beautiful little knives for such mundane jobs as peeling potatoes!

HARRY ENNIS claims that the toughest and hardest of all game horns on this continent. He makes more novelties out of deer antlers than any other sort—mostly because he can get more deer antlers than any of the rarer caribou, moose, mountain sheep, or mountain goat horns. He enjoys working with elk or wapiti antlers, because they are so beautiful in shape and finish, and partly because they are soft and easily cut.

Sometimes he gets hold of freak horns, sometimes extra large ones. He guided L. L. Bechtel of Texas, into the wild country alongside Jasper Park one year and this hunter shot a mountain caribou with a spread of 42 inches, the second largest caribou antler spread on record.



Harry G. Ennis of Entrance, Alberta.

Asked to name the complete list of articles made, Harry Ennis said: "Oh, golly! Every time I make something, I get a new idea for something else. I don't know the complete list any more, but I do make crib boards, ash stands and trays, paper weights, paper knives, kitchen knives, hunting knives, gun racks, hat racks, tie and towel racks, pipe racks, smokers' sets of all kinds, bridge sets, book ends out of sheep's hooves as well as horn material, horn chairs, and buttons and belt buckles out of moose and sheep horn material, match holders, and—And a lot of other things!"

Every item he makes is ink-labelled "Canadian Rockies." He sometimes writes his name on his finished articles, before applying the varnish. His ornaments and novelties are very durable, naturally, and he tells me that the famous Colonel Townsend Whelen, an American hunter who has bagged big game trophies all over the world, has a hunting knife finished by Harry that has been in hard use for many years.

He started this hobby about 12 years ago. At first, he sawed out and polished the antler novelties for his own amusement. Today, with ill health still preventing him from full-time guiding work, he finds that his horn novelty business is contributing nicely to his income. Tourists, friends and strangers from all parts of the continent are now ordering his unique novelties for gifts and souvenirs, and Harry Ennis is happily embarked on one of Canada's strangest occupations.

Sidelight On British Farming

AN interesting sidelight on one important aspect of British farming is shown by a Farmer and Stocker Breeder account of modernization on the estate of the Duke of Westminster. This estate consists of 52 farms, totaling about 8,000 acres of an 11,000-acre estate. One purpose of modernization is to equip the farms during the next two years to maintain about 3,700 tuberculin-tested cattle. It is estimated that this number of cows will provide weekly milk rations for 165,000 adults.

By 1950 it is estimated that £150,000 will have been expended for the completion of the tuberculin-testing scheme and that an additional £80,000 will have been expended in the repairs and other maintenance. Rents will be raised slightly, so as to repay capital costs on the basis of 2.5 per cent yearly instead of the usual 4.5 or 5 per cent.

Stock Plans for Farmhouses

THAT many farmhouses in this country have been built without consideration of the special needs of the farm family is a statement few would question, even though no exact figures are available. Various agencies interested in rural housing have been producing stock plans drawn specifically for the farm situation in an effort to help families make a satisfactory choice of plan. Eight of these plans were submitted to 31 Illinois farm families with the request that they choose the one most suited to their needs.

Four of the plans were one-storey; two were storey-and-a-half; and one was a two-storey. Three were United States Department of Agriculture plans; two were available through the agricultural engineering departments of land-grant colleges; one was offered by a farm magazine; one had been published in a building material trade magazine. Also included was the basic farmhouse developed at the University of Illinois, which had had rather wide publicity just previous to the study.

All the plans were drawn to the same scale and simplified as to amount of detail before presentation to the families. Sketches of the exteriors were included to make the plans more interesting. No estimates of cost were given since the study was concerned with the amount and arrangement of space the families felt to be desirable rather than with the money they felt they could spend.

While urban families may move several times to meet the varying demands for space, that course is not open to farm families. Farmhouses should meet the maximum need for space, a need most clearly felt by families with young children. The families chosen for this study were in the pre-school or grade school period of the family cycle. They had an average of 2.3 children.

The families were living in the corn belt area of northwestern Illinois. They included 16 tenants and 15 owner-operators, of whom four farmed rented land in addition to that which they owned. No attempt was made to secure families of the same income level. The average net incomes for 1946 and 1947 ranged from less than \$2,500 to more than \$20,000.

Sixteen families chose plans of more than one storey. This is contrary to the reported trend toward one-storey houses. Remarks on questionnaires and comments during the interviews indicated two reasons.

First, the families thought an equal amount of space could be built more cheaply in a storey-and-a-half or two-storey house than in a one-storey. Second, they felt that the one-storey house would be more difficult and more costly to heat. Custom may also have been a factor since 29 families had houses of more than one storey.

Two of the plans had five rooms and a bath. This is below the standards established in the "Housing Requirements of Farm Families in the United States," Miscellaneous Publication Number 322, United States Department of Agriculture. Three families chose one of these plans, but the other—the only two-bedroom plan—was not selected by any family.

Fifteen families chose plans which provided a separate dining room and

Findings of interest to western Canadian farmers and their wives are made by a study of rural housing needs and inclinations in the U.S.

by CATHERINE M. SULLIVAN

dining space in the kitchen, a pattern which other studies have shown to be approved by farm homemakers. Twenty-two families chose plans with separate dining rooms; one would alter the selected plan to provide a dining room. Of the houses in which the families were living, 28 had separate dining rooms. No question was designed to show how much the families used their dining rooms or would use those in the selected plans.

THE questionnaire which accompanied the set of plans emphasized the work areas. Twenty-five families chose plans with the first-floor work space in addition to the kitchen. Information was sought on the place where certain activities were carried on in the present house and in the selected plans.

Highest on the list of preferred uses for first-floor work areas was the washing of clothes. Seventy-two per cent of the homemakers who chose plans with such work areas would wash clothes there; 20 per cent would dry clothes there in winter; and eight per cent would use them for summer drying. Fifty-six per cent would iron there.

These homemakers were asked to list their present laundry equipment and also what they would like to have for use in the plan selected. During the final interviews, many indicated that they had been vague in their answers about equipment for the selected plan. They had many questions about laundry equipment. Those who are concerned with helping farm families with plans for new or remodeled housing may well encourage farm families to analyze their needs for equipment so that acceptable space can be planned.

Replies to questions on certain food-handling tasks showed that 19 homemakers would prefer the utility room for washing vegetables for meals; 14 would dress poultry for meals there. Among these homemakers, there were 10 who dressed poultry for market. Seven of them would use the utility room. Preparation of other produce for market would be done either in the basement or utility room.

While all 31 families preserved some food by canning, only four canned more than 250 quarts a year. This quantity included fruits, vegetables, and meats. Twenty-two families prepared some food at home for freezing; 15 indicated that they rendered lard at home; but only nine cut meat or made sausage. All of these families rented frozen food lockers; five had home freezers. Increasing interest in the preservation of food by freezing, added to the availability of equipment for both home and commercial freezing, points to the necessity of studying the amount and kind of space to be planned for preparation and storage of frozen food. If homemakers are canning smaller amounts of food, space for storage of canning equipment and canned foods also needs study. Twenty-four homemakers in this group stored canning equipment in

the basement. Twenty-three indicated they would use the same storage in a new house. If less space is to be required, it seems that the problem is to provide such space on the first floor for more efficient use of the homemakers' time and energy.

Those who plan farmhouses usually recognize that some space must be provided for the men to hang chore clothes and to wash when they come in from the barns or fields. In 14 of the houses in which these families were living, that space was in the kitchen. In the selected plans, no family would choose the kitchen for this activity. Nineteen families would locate the chore clothes closet and wash-up space in the basement. Direct access to the basement from the outside was considered important.

Another phase of activity on which these families were asked to express present practices and choices was care of milk utensils in the kitchen; others would use the basement or utility room. In cases where there was a separator, its location determined where it and other milk utensils would be washed.

Remarks about necessity of play space made by some parents led to inclusion of questions as to location, adequacy, and convenience of such space in the present house. Nineteen families considered present play areas convenient. These areas included kitchen, dining room, living room, bedroom, den, office, playroom on the first floor, attic, and basement. Comments suggested that play space near the work area is desirable. Eight families chose basement play space in the selected plans.

The general conclusions, based on the survey, were that most agreed that three bedrooms and a separate dining room were desirable features in a

farm home. Auxiliary work space on the first floor, play space for children and a first-floor room planned to meet needs such as playroom, office, sewing centre or extra bedroom were also thought desirable.

Educational work could also profitably be done to help homemakers use housing facilities more efficiently. This would include conservation of time and energy through motion and time study, and information to help homemakers evaluate the choice and placing of equipment in relation to the needs and practices of the individual family. It was also concluded that governmental and private agencies interested in rural housing should continue to make planning helps and desirable plans available.

Article from the Journal of Home Economics, February, 1950, Vol. 42, No. 2. Miss Sullivan, an extension specialist in home management at the University of Illinois, has based this article on research she completed for her M.S. degree at Purdue University.

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The Country Boy and Girl

The Nutshell Necklace

by MARY E. GRANNAN

ANN MORRISON has the most beautiful nutshell necklace I have ever seen. It is strung, not on silken cord as you would expect, but on the strong fibre stem of a woodland moss. That's because the necklace came from the woodland. It was sent to Ann by Grandmother Squirrel. It was the old squirrel's way of saying "Thank you" to Ann Morrison.

It all happened like this. One morning, Ann, who has many friends in the meadow and forest, went for a walk in the deep woods. She had just rounded a tall pine tree, when she heard an angry chattering, coming from a rotting log that lay nearby. And then she saw the tip of the reddest, fluffiest squirrel tail peeping from the end of the log. Ann hid herself behind the pine tree and she listened, and she heard the voice of an old squirrel saying, "Red Tail, you are not going to the city today! Do you hear me, Red Tail? You are not going to the city!"

The red tail that Ann had seen peeping from the end of the log, seemed to grow in length. Its owner was backing out of his log home. He was followed by the angry voice. Ann then saw Grandmother Squirrel. She was shaking her finger at Red Tail. He was laughing.

"Red Tail," went on his grandmother, "I want your promise that you will not go to the city today. You are a country squirrel, and you do not know the ways of the city." Red Tail smiled at his grandmother, and she said again, "I want your promise. Don't stand there smiling at me! Give me your promise!"

The saucy little fellow shook his head, and said, "No, I'm not going to give you my promise, Grandmother, because I am going to the city. I'm smart. I can take care of myself. The parks are full of squirrels, and nothing ever happens to them, and surely if they can look after themselves, I can."

"You are not going to the city," said the old squirrel again.

"Who's going to stop me?" laughed Red Tail. "You can't catch me, Grandmother, because you've got rheumatism in your left hind leg." Red Tail flushed at what he had said. He didn't mean to be unkind, so he added softly, "Don't worry about me grandmother. I'll be back at sunset with some nice peanuts for you. I'll get some for you at the Zoo."

"The Zoo!" gasped the old lady. "You don't mean to tell me that you go to the Zoo, too?"

"Yes," said Red Tail. "I like to tease the tigers." And with that, he disappeared like a red flash and was lost to sight. The old squirrel sat down on the doorstep of her log house and wept.

Ann Morrison felt very sorry for her and stepped from her hiding. "Grandmother Squirrel," Ann said, "don't cry. I heard all that happened, and I'll look after Red Tail for you. I'm friends with all the animals in the Zoo, because I go there to see them. I know the dogs and the birds, and . . . well, I know just everybody. I'll ask them all



HAVE you raced with the wind? One March morning as Dick and Molly and Bob were trudging down the road to school suddenly Bob's hat blew off and went rolling down the road. Of course Molly and Dick laughed as Bob went racing down the road after his hat and caught it just before the wind blew it into a puddle. "The wind played a mean trick on me," grumbled Bob as he came back puffing very hard.

"You thought it was a fine wind when it blew your kite high up into the air," laughed Molly.

"The wind will dry up these puddles soon," said Dick, "besides you are very glad to have the wind push your sail boat along and dry you off after a swim."

"I guess it's only a mean wind sometimes," admitted Bob. "I had to keep on the run but I won my race with the wind today."

Would you like to make a rubber stamp with your initials? Just cut a block of wood two inches square and one inch thick. Then cement a piece of rubber or bicycle tire to the block making sure that the rubber lies perfectly flat. When the cement has hardened draw your initials backwards on the rubber and cut away the parts which do not form the letters. To see how to draw your initials backwards, first draw them on a piece of paper, then look at them in a mirror. Dip your stamp very lightly in some ink and it will print your initials.

Ann Sankey

to leave Red Tail alone until he gets some sense in his head."

Ann was as good as her word. Every animal in the Zoo, and every dog on the street promised to watch out for Red Tail on account of his grandmother.

But one day a circus came to town. When the parade passed along the street, the saucy Red Tail was sitting on a telephone pole. He decided to join the parade and leaped to the back of the biggest elephant. Mr. Elephant didn't like the squirrel running up and down his broad back turning somersaults, so he turned his trunk upward, picked up Red Tail, and tossed him into an open milk truck. Then with his trunk, he closed the door.

That evening a meadow lark came from Grandmother Squirrel to tell Ann that Red Tail had not come home. Ann was afraid that someone at the Zoo had broken his promise to her. But the animals told Ann that there had been no squirrels or children at the Zoo that day. Then Ann remembered the parade.

"Oh dear," she cried, "The circus! Those animals made no promises to me. That saucy squirrel has gotten into trouble with some of them."

She knew that the pigeons were on the street when the parade passed by. She went to Mrs. Pigeon who lived in the church steeple. Mrs. Pigeon had seen everything, and told Ann about what had happened.

"But those milk trucks are refrigerators," gasped the little girl. "He'll be frozen. Oh dear, I hope I'm in time."

She went to the garage where all the milk trucks were kept, and told her story to the garageman. He began to open truck doors. In the fourth truck they found Red Tail. His eyes were closed and he was half frozen. Ann wrapped him in her kerchief and took him home. She rubbed his joints with oil of wintergreen. She tucked him in her doll's bed and covered him

with blankets. The next morning, he was almost as good as new, and Ann carried him to his woodland home, in her mother's shopping basket. Red Tail had learned his lesson.

Three days later, early in the morning, Ann found her nutshell necklace on her window sill. She is very proud of it. Do you blame her?

Mystery Numbers

The answer to this problem will baffle you but you will find it always comes out correctly. Write down your age. Double it. Add 5. Multiply by 50. Subtract 365. Add the change you have in your pocket (under one dollar). Add 115. The first two numbers of the answer will be your age and the last two will be the amount of your change.

For example, Steve is ten years old and has 25 cents in his pocket.

| | |
|--------------------|-------|
| His age | 10 |
| Double it | 20 |
| Add 5 | 25 |
| Multiply by 50 | 1,250 |
| Subtract 365 | 885 |
| To that number add | |

| | |
|-----------------------|-----|
| his change (25 cents) | 910 |
|-----------------------|-----|

| | |
|---------|-------|
| Add 115 | 1,025 |
|---------|-------|

His age (10), the two numbers at the left.

His change (25), the two numbers at the right.

A Letter Block Puzzle

HERE is one of those easily-made puzzles that will provide hours of amusement.

The equipment consists only of a playing board and eight markers. You can make it just as fancy as you like.

The smartest-looking apparatus is that cut from wood. Eight blocks one inch square and from one-quarter to one-half inch thick will be required. The playing box should be three inches square, inside measurements. The top edges of the box should be flush with the markers. Cut both blocks and box from hardwood and

polish all surfaces. Also polish the inside surfaces of the box so that the markers will slide smoothly. The letters may be put on with India ink and all outside surfaces should be varnished.

If you wish to set up the puzzle for some quick practice, all you need do is cut out the markers and playing field from a piece of cardboard. After cutting out a four-inch square, mark the playing field off into nine one-inch squares. This leaves a half inch margin around the board. The eight markers may be made by drawing circles around the edges of a 25-cent piece. The letters are marked on in ink (figure 2).

In the diagrams, the names Eva, Roy and Ma are used. Of course, it will be more interesting for you to use your own name or those of your pals if you can fit them in. You must find two three-letter names and one two-letter name.

To play the game, arrange the markers as shown in figure 1. Then push one letter at a time to the place that is vacant for the time being, without removing any letters from the playing board.

To solve the puzzle, you must have Eva and Ma exchange places so that they end up as shown in figure 2.

You will not find the solution too difficult but the real test of your skill appears in the number of moves you take to make the required change. Once you have done the puzzle, count your moves in subsequent attempts and aim to improve your record.

There are many variations to this fascinating game. Here are some of them.

1. Get Ma in between Roy and Eva.
2. Have the names spelled vertically instead of horizontally.
3. Start with the letters all jumbled up and bring out the names again.
4. From a jumbled start, spell out one name, then remove these markers from the board to make more room, and finish the puzzle with the remaining markers. This is the easiest method. You will be able to think out many other stunts of your own.—Walter King.

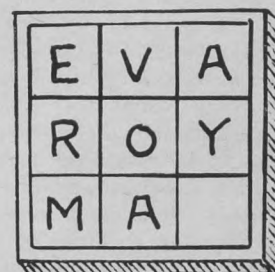


FIG. 1

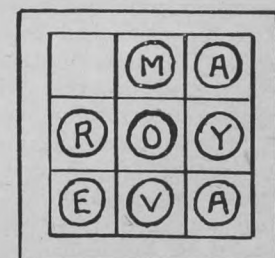


FIG. 2

NEW 1950 EDITION...NEW 1950 EDITION...NEW 1950 EDITION...

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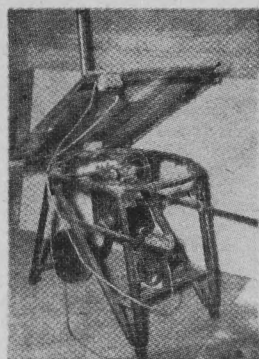
"For Field, Shop and Home Mechanics"



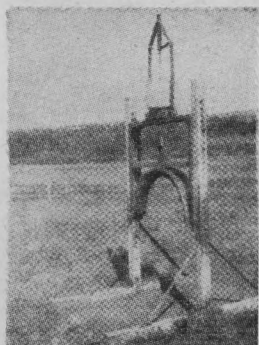
A light home-made elevator mounted on the combine.



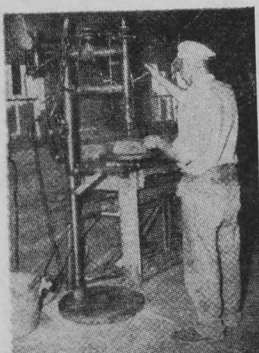
Strength of the chute is demonstrated as this man is lifted to the top of the stack.



The portable saw with top raised to show motor and controls.



The back scratcher and delouser stands in the pasture.



The press drill with saw attachment—all home-made.

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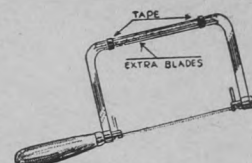
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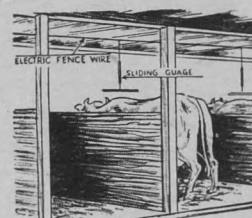
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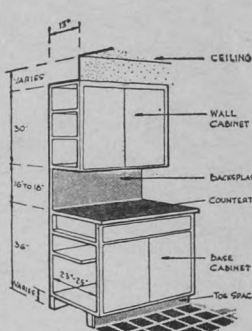
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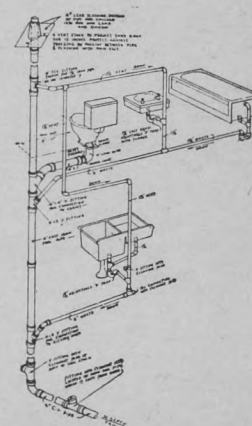
Extra blades are always at hand and don't get lost.



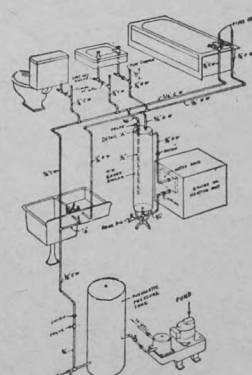
The "trainer" should be adjusted to suit each cow's height.



Standard measurements may be varied slightly to suit individual needs.



Where additional fixtures are used a second stack may be added.



A skeleton water supply system with details of the range boiler connections.

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VOL. LXIX WINNIPEG, MARCH, 1950 No. 3

The British Election

The British election has ended in disappointment for everyone because of its inconclusiveness. Owing to its very slim majority the Labor cabinet must act as a caretaker government until another election allows British voters to speak more decisively. There will be an end, temporarily at least, to the positive leadership that characterized the life of the first postwar ministry.

The past five years have seen a two-fold purpose uncovered. With one hand the Attlee government carried out its pre-election pledges to introduce certain socialistic measures. With the other hand it had to deal with a state of economic prostration, made incomparably worse by the war, but in reality dating far back into the interwar years. Any analysis of Britain's trade, and her failure to modernize industry in those years will show that her present paralyzing difficulties with dollar exchange had its birth in the era of Baldwinian complacency.

Opinion will be divided as to whether socialism has hastened or retarded recovery. Certainly the chronic state of emergency in which the government lived was an ill-starred period for the introduction of socialism, or any other political philosophy. Any government faced with the appalling reconstruction job which confronted the administration in 1945 was certain to adopt many policies which would displease voters. Few people like controls, no matter how obvious the need for them may be in time of emergency. The Conservative appeal was made to voters sickened of ten years of austerity, and it is not surprising that it should have succeeded to the extent it did.

The swing to the right, in all the countries concerned, will see an increased rate of de-control, and the repeal of unpopular measures designed to cut down domestic spending in favor of larger exports. For instance, in Australia Mr. Menzies has put an end to gasoline rationing, as he promised to do before the election. No doubt his action was gratefully received by the Australian car driver. On the other hand it will require an estimated increase of gasoline imports from the dollar area of £4,000,000 annually. This must come, not from Australian sources alone, but from the sterling area's dollar pool, and thus affects all the other countries in that pool. There is some danger that Australia's relaxation will lead to demands for similar action in other sterling area countries which have been living under self-denying ordinances. How far can the discipline, of which Sir Stafford Cripps is the symbol, be maintained by alternative leadership, and to what extent will world recovery be affected? These are questions which only time can answer.

Shopping For Television Equipment

Television has not yet become a matter of public interest in western Canada, but there are now 4,000,000 receiving sets in the United States, and it is being widely discussed in eastern Canada, where interest has been stimulated by parliament's grant of \$4,500,000 last December to commence construction in Toronto and Montreal.

Television is an expensive development. The cameras used to record a program cost \$25,000 each. Whereas radio broadcasts can be transmitted on a telephone wire, television programs require co-axial cable which costs \$27,000 a mile, and usually has to be buried underground. A one-hour television program is said to cost \$20,000 to produce. A system spanning Canada like the CBC network calls for an estimated outlay of \$40,000,000.

Because of the dollar exchange problem, it has been taken for granted that Canada would turn to

Great Britain for its television equipment. That country was in the field four years ahead of its rivals. The war halted public extension but the British never lost their scientific lead. The only primacy Americans can claim, as far as this observer can detect, is a vastly larger number of emission stations, due to a different national policy of control, and bigger and better beer ads. Television equipment is a type of export which the British are admirably qualified to make. It could play a significant part in that country's economic recovery, a fundamental condition for Canada's continuing prosperity.

To the surprise of everyone, it is announced that the first extensive purchases, towers for the two projected eastern stations, have been made from an American firm, and that CBC engineers have recommended adoption of American technical specifications, foreshadowing heavy dollar purchases in the future.

This is going to take a lot of explaining. The public will be told that American suppliers have agencies on the ground, and can service equipment more rapidly than could be done by manufacturers across the Atlantic. It may be argued that the present short radius of television will some day be overcome by science, and that it is therefore wise to have uniform sending and receiving sets on both sides of the line. Both of these arguments can be easily dismissed. Indeed, some Canadians are asking if television in Canada is to become another factor in cementing the union of its widely separated provinces, or if it is merely to provide another market for American artists and manufacturers, fortifying the strong influence of radio for the Americanization of Canada.

If there are weightier arguments the public should be informed before commitments are made for further equipment purchases from dollar sources. The Canadian Government cannot expect its private citizens to heed exhortations to divert import orders to the sterling area, if it permits its agent, the CBC, to prefer spending on a lavish scale in the dollar market. There need be no hurry to plunge into commitments from which this country cannot easily retrace its steps. The most vocal demands for the early development of television in this country come from private parties who are eager to get their hands on valuable franchises. There is a good deal to be said for continuing the former policy of going slowly, and allowing others better equipped to do so to carry out the expensive groundwork.

European Union

Marshall Aid was first conceived as American help in the form of food and other products to ward off grave economic, social and political deterioration among the western European nations. In time it has widened its horizons. It has gathered to itself the conception of a Western European Union, consolidating the military potential of that region to repel any enemy onslaught with greater confidence. In the minds of different American statesmen it means different things. To some it means merely agreements between the Atlantic nations to prepare their armed forces for quick action under unified command, to integrate their productive resources, and to promote the mutual exchange of goods among them. To others it has meant a repetition of the miracle of the Founding Fathers who established one rule that spread over the heartland of a continent. The former group has freely expressed frequent disappointment at the slow rate of progress in reaching their very limited goal. The latter are beginning to see the hopelessness of their dream. Both groups charge that Britain has been the greatest stumbling block.

In some respects this has been true. Britain's position is different from that of the other partners in a possible European Union. She is the senior member of a great Commonwealth, and her responsibilities to that group may conflict with some of the engagements into which she might be expected to enter. She is likewise the centre of a great banking empire which, though it has lost world leadership, still wields an important influence in world trade. While the other nations receiving Marshall Aid in Europe are members of the sterling bloc, there are vast areas and weighty interests that lie further afield.

Any study of European Union discloses the increasing loss of control Britain would experience with progressively more binding forms of union. The difficulties are least on the military side, although even here there is room for apprehension. What would have been the outcome had British forces been under supreme French command in 1940? The last man and the last plane would have been thrown into the continental battle. The air squadrons which eventually won the Battle of Britain, and thus denied the narrow seas to the planned Nazi invasion, would have been squandered piece-meal in the hopeless battle to save Paris. But unified command was painfully achieved twice under the darkening sky of defeat and it is not too much to hope that the gravity of today's situation may lead to effective co-operation now.

On the economic side the difficulties are tremendous. Beginning with the lowest degree of co-operation, a customs union, Britain would be posed with some thorny problems. Her Commonwealth partners would not be members of the Union. Would Britain, following a concerted union policy, be obliged to let Danish butter in free while she imposed a duty on the New Zealand product? Would the Canadian cheese producer, who is dissatisfied with the extent of the preferential treatment he now gets, be forced to step aside for the Dutch dairyman?

All of the nations of western Europe are laboring under conditions of capital deficiency and monetary weakness. They can only be overcome by the enforcement of restrictions, and must be remedied before the restrictions can be removed. National disciplines vary. It is generally agreed that Britain's self-imposed austerity could not be enforced anywhere on the continent. Throughout western Europe controls have repeatedly been defeated by lack of public support and black markets have flourished. Could different rates of recovery be maintained under Union?

The more binding forms of union can be more easily brushed off. They lead eventually to a joint control of taxation and a surrender of important national policies, like full employment. They lead to one central bank and loss of control of fiscal policy. Nationalism has served evil ends in our time. Union is an inspiring ideal. But few Americans can comprehend the time it will take to bring it into effect.

Another Rate Increase

The Transport Board has handed down its decision authorizing railway rate increases by a flat 7.4 per cent, just as this issue of The Guide goes to press. Thus the long standing discrimination against western shippers is confirmed and increased.

Westerners have been over this ground time without number, and the facts are well understood. Judged by their own figures, over the past 30 years the railways have made twice as much profit out of their western traffic as out of the East, in spite of the fact that the western volume of business was only about half what it was in the East. For the last three decades the Board has been unable to devise a formula which would satisfy the demands of the roads for revenue, and at the same time bear evenly on all parts of Canada. The Board still follows the principle of flat increases. It authorizes maximum rates which the railway must not exceed, but below which they may drop at their own discretion. As there is water and highway competition in the East, their policy is to keep eastern rates down to a level which still assures them business, and to charge all that the law allows in the West.

Up to 1922 the Board showed some appreciation of this inequity, and made a move to increase eastern rates while holding western rates down. Since that time it has remained unmoved by western appeals for the removal of the discrimination. Meanwhile successive rate increases magnify its effects. The interim rate increase of last September is said to have been responsible for cancelling eastern rail movements of export lumber from prairie points. Every rate increase lessens the ability of the West to compete on other export commodities. Westerners must now pin their hope on the Royal Commission on Transportation, whose report, it may be, will set this discrimination before the public in its true perspective.